

North Korea

Development Report

2003/04

North Korea
Development Report 2003/04

KOREA INSTITUTE FOR
INTERNATIONAL ECONOMIC POLICY

KOREA INSTITUTE FOR
INTERNATIONAL ECONOMIC POLICY

The Korea Institute for International Economic Policy (KIEP) was founded in 1990 as a government-funded economic research institute. It is the world's leading institute on the international economy and its relationship with Korea. KIEP advises the government on all major international economic policy issues, and also serves as a warehouse of information on Korea's international economic policies. Further, KIEP carries out research for foreign institutes and governments on all areas of the Korean and international economies.

KIEP has highly knowledgeable economic research staff in Korea. Now numbering over 100, our staff includes research fellows with Ph.D.s in economics from international graduate programs, supported by more than 40 researchers. Our staff's efforts are augmented by our affiliates, the Korea Economic Institute of America (KEI) in Washington, D.C. and the KIEP Beijing office, which provide crucial and timely information on the local economies. KIEP has been designated by the government as the Northeast Asia Research and Information Center, the National APEC Study Center and the secretariat for the Korea National Committee for the Pacific Economic Cooperation Council (KOPEC). KIEP also maintains a wide network of prominent local and international economists and business people who contribute their expertise on individual projects.

KIEP continually strives to increase its coverage and grasp of world economic events. Expanding cooperative relations has been an important part of these efforts. In addition to many ongoing joint projects, KIEP is also aiming to be a part of a broad and close network of the world's leading research institutes. Considering the rapidly changing economic landscape of Asia that is leading to a further integration of the world's economies, we are confident KIEP's win-win proposal of greater cooperation and sharing of resources and facilities will increasingly become standard practice in the field of economic research.

Choong Yong Ahn
President

Preface

The North Korea Development Report was launched as an annual report in 2002 in recognition of the need for a comprehensive overview of the North Korean economy and policies. The publishing of this second edition is important because it not only supplements the findings of the first edition, but also updates the present condition of the North Korean economy and reflects the recent changes in its economic policies. Like the inaugural volume, Korean authors have contributed to this *Report* to reflect exclusively Korean experts views.

The topics covered in this report are as follows: macroeconomics and finance (Part I), industry and infrastructure (Part II), foreign economic relations and inter-Korean economic cooperation (Part III), social welfare and science & technology (Part IV), and the recent economic reforms (Part V). Parts I through IV correspond to the organization of the first edition of the report, while Part V is a new section that covers the “July 1 Economic Reforms” launched two years ago and subsequent economic policy changes. This second edition moves a step beyond the economic and policy focus of the first edition by attempting to address the most pressing questions concerning the North Korean economy.

As is widely known, North Korea announced the so-called July 1 Economic Reform and later designated Sinuiju, Kaesong, and Mt. Kumkang as special economic zones. Despite these recent attempts to revitalize its economy through economic policy changes, however, it has failed to attract active economic assistance and investment from the international community because of the North Korean nuclear standoff and subsequent regional uncertainty. As a consequence, the initial expectations of the North Korean government with regard to the economic reforms and to the partial opening of the economy to foreigners have not been met.

North Korea’s economic growth rate for 2003 is estimated at 1.8 percent, slightly higher than the previous year’s 1.2 percent; the positive growth rate over the past five years since 1999 offers some basis for optimism. Nevertheless, it cannot be said that the country’s economy is on the road to recovery, as this

anemic growth rate is far too weak to overcome the near collapse of the economy during the 1990s.

If we examine the trends in each industrial sector, we can see that the manufacturing sector is still experiencing considerable hardship due to the shortages in energy and raw materials that have continued in parallel with little progress in North Korean nuclear issues. On the other hand, slight improvements in electric production, helped by factors such as the construction of small-scale electrical power facilities and some increases in coal production, have enabled slight increases in manufacturing production. In other areas, the July 1 Reform has greatly stimulated the commercial and distribution sectors thanks to the enormous growth in the range of private commercial activities, including increases in street vendors and stores and the systematization of service industries and brokerage businesses.

In agriculture, total grain production in 2003 reached an estimated 4.25 million tons, an increase over the previous year attributable to good weather and 300,000 tons of fertilizer assistance from South Korea. This increase, however, was far less than the domestic demand, so that appeals for food assistance from the international community were unavoidable. The construction industry saw the largest growth among industrial sectors, thanks to favorable factors such as a large surplus labor pool and the rehabilitation of urban living facilities financed through sales of People's Bonds.

Despite the overall deterioration in foreign relations caused by the nuclear problems, North Korea's trade with its major trading partners such as China continues to grow. Trade grew 5.8 percent in 2003 to \$2.39 billion; exports rose 5.5 percent to \$777 million while imports increased 5.9 percent to \$1.61 billion. Trade with China in particular is growing significantly, and now comprises almost 50 percent of North Korea's entire foreign trade. This increasing dependence on China is partly the result of the international economic sanctions. The likelihood that this dependence will have a negative impact on future expansion of inter-Korean economic cooperation cannot be ignored.

Although the external environment has worsened over the nuclear question, inter-Korean cooperation and investment have steadily grown. North-South economic exchanges have led to substantial results, including new legislation and systems related to inter-Korean economic cooperation as well as the three major cooperative projects (Mt. Kumkang tourist projects, the reconnection of railroad and highway links, and the construction of the Kaesong industrial complex). Although trade between the two Koreas has continued to rise, reaching \$700 million annually for the first time in 2003 and maintaining that pace in the first half of 2004, the recent chill in North-South relations has interrupted this trend. As of August 2004, although a total of 46 investment projects have been ap-

proved by the South Korean government, the pace of bilateral interchanges has slowed compared to the past. Nevertheless, the situation is slowly turning around thanks to the construction of the Kaesong industrial complex. Given that the strained relationship between North Korea and the United States over the nuclear issue and the uncertainties surrounding the Korean peninsula are the fundamental obstacles blocking further expansion of inter-Korean cooperation, a rapid and peaceful settlement of the nuclear issue is of urgent concern.

Meanwhile, North Korea is making efforts to change the management and operational framework of its economic system through measures such as the July 1 Reform and follow-up policy changes. The policy measures launched after the July 1 Reform are unprecedented, active policy changes. The government itself has commented that they are “as epochal as the land reforms of 1946.” The recent reforms will not only have major impacts on North Korean consumers, economic activities, and production management systems, but are also expected to lead to significant changes in future developmental planning.

Currently, evaluations and discussions of the July 1 Reform are taking place in South Korea, the international community, and the field of North Korean studies. The first question is whether the July 1 measures will fundamentally alter the characteristics of the North Korean economic system. Some are of the opinion that these measures are a potential sign of progress toward a market economy, while others insist that these reforms are simply intended to strengthen the existing planned economy.

The second question is whether these reforms will produce sufficiently fruitful results to lift North Korea out of its current economic crisis. On the one hand, optimistic assessments claim that the introduction of an incentive system will motivate both labor and capital enough to revitalize overall economic activity and create a certain amount of progress. On the other hand, some argue that the reforms do not go far enough in creating an economic environment favorable to large-scale foreign investment, leaving North Korea short of the funds it needs to resolve its economic problems, and will thus ultimately fail. In this regard, analysis and verification of the key aspects of the July 1 Reform and subsequent policy adjustments based on a variety of domestic and international opinions are needed.

Looking at the July 1 Reform, the most representative of North Korea’s recent economic policy changes, the following characteristics can be identified. First, in moving from an economic system based on political and ideological motivation to one based on concrete material rewards, the government is attempting to resolve its daunting economic problems by stimulating the desire to work. Second, by applying the new concept of price and reducing the conceptual difference between value and sales price, it hopes to cut the losses of state-

owned enterprises. Third, by rationalizing planning goals and operations processes, North Korea is attempting to minimize the lack of coordination among industries and state-owned enterprises in order to create more effective management of its internal cooperative production systems. Fourth, the North Korean regime is working towards increasing the autonomy and responsibilities of local governments and public companies to foster creativity and initiative, and at the same time decentralizing the central government's burdens and responsibilities.

It can be seen that the recent changes in government policy are more innovative than earlier reforms, in that they are not limited to specific sectors but rather are intended to promote overall economic change. However, it cannot be assumed that North Korea has completely abandoned its existing ideology and philosophy, as the regime itself has noted that the July 1 Reform is compatible with socialism and are simply the most effective economic management method to improve and perfect the socialist economic system.

In general, the economic reforms of socialist countries involve three factors: reform of the price system, decentralization of decision-making, and increase in the flexibility of developmental targets. The July 1 reform measures include all three historically distinguishable socialist economic reform factors, and thus can be considered highly progressive. Lately, even high-ranking North Korean officials casually refer to these changes as "reforms," implying that they practically accept the notion of "market-oriented reforms." However, many additional policy changes are yet necessary for the economy to fully recover, and only by aligning these changes with the fundamentals of a market economy and economic liberalization can they succeed. Furthermore, in order to realize the results of these economic reform policies, the North Korean regime must clearly acknowledge the necessity of establishing peaceful foreign relations and cooperative inter-Korean relations.

Until now, North Korea has been severely isolated from the international community because of its secretive administration and strict regulation of information, which have limited international understanding of its systems. Research on North Korea has been carried out in various forms by different institutions, but there have been few attempts to organize and synthesize the available information. In this regard, *The North Korea Development Report* can be considered a comprehensive, in-depth assessment that was compiled to serve as an authoritative reference for policymakers in the Korean issues and inter-Korean cooperation, international experts on Korean affairs, and companies interested in business with North Korea.

We would like to thank the contributors who actively participated in the writing of this volume and the domestic and international North Korean experts who offered their expertise comments during the research process. We would also

like to thank our institution's North Korea Team and Publishing Team for their efforts in planning, research and editing this volume. We also owe a debt of thanks to Mr. James M. Lister and other staff of the Korea Economic Institute in Washington, D.C. for their consistent support and useful suggestions to edit this *Report*.

The Korea Institute for International Economic Policy will continue to analyze North Korea's economic changes, publish a new edition of *The North Korea Development Report* each year in order to raise international interest in North Korea, and strive to improve the quality of its future *Reports* by inviting international contributors. We hope that this second edition of *The North Korea Development Report* will help raise the quality of research on and policy toward North Korea's economy as well as advance the international community's understanding of "the closed country."

Korea Institute for International Economic Policy
President **Ahn Choong Yong**

The North Korea Development Report has been written by the researchers of the Korea Institute for International Economic Policy and by leading experts in the field of North Korean studies in South Korea. Papers were contributed by Ahn Choong Yong (Chapter 1), Cho Myung-chul (Chapters 1, 14), Yoon Deok-ryong (Chapter 2), Park Suhk-sam (Chapter 3), Lee Seog-ki (Chapter 4), Kim Woon-keun (Chapter 5), Ahn Byung-min (Chapter 6), Hong Soon-jick and Kim Young-yoon (Chapter 7), Kim Chul-whan (Chapter 8), and Hong Ihk-pyo (Chapter 9). Lee Jong-woon (Chapter 10), Dong Yong-seung (Chapter 11), Lee Sam-sik (Chapter 12), Lee Choon-geun (Chapter 13), Lee Chan-woo (Chapter 15), and Kim Keun-sik (Chapter 16) have also provided their works for this report.

The North Korea Development Report was supported by an advisory group which consists of experts inside and outside KIEP; Kim Jung-sik (Yonsei University), Lee Sang-man (Chung-Ang University), Kim Kwang-yong (Hanyang University), Kim Yeon-cheol (Korea University), Ro Jae-bong (Korea National Committee for Pacific Economic Cooperation), Lee Chang-jae (KIEP), Ahn Hyund-do (KIEP), and Chae Wook (KIEP). Indeed, a number of scholars and researchers related with the North Korean affairs worldwide have made valuable comments and suggestions for improving the project. The preparation of the report was aided by KIEP's Publishing Department head by Bae Sun-hee and research assistants for the project; Lee Hyun-suk, Kim Min-ju, and Kim A-young. Editorial work was supported by Lee Jong-woon and Uhm Sooya of KIEP, Publications Professionals LLC, and staffs of the Korea Economic Institute in Washington, D.C.

Contents

Preface	3
Contributors	17
Part I. Macroeconomic Status and Finance	
Chapter 1. Current Status of the North Korean Economy and Its Prospects	23
A. Macroeconomic Status	23
B. North Korean Economic Trends by Sectors	34
C. Outlook for the North Korean Economy	46
Chapter 2. National Financial Revenue and Expenditure	50
A. Changes in North Korea's Budget	50
B. Changes in the Financial Situation	56
C. Issuance of the People's Life Government Bond	58
D. Conclusion	64
Chapter 3. Banking and Price Management	68
A. Banking System	68
B. Price System	77
Part II. Industrial Management and Problems	
Chapter 4. The Industrial Sector	89
A. North Korea's Recent Industrial Policy	89
B. Industrial Conditions by Category	90
C. Problems and Prospects for North Korean Industry	99
Chapter 5. The Agricultural Sector	103
A. Overall Agriculture in North Korea	103
B. Structure of Agricultural Production in North Korea	105
C. Current Status, Issue of Grain Production, and Its Prospects	109
D. Current Situation and Issues of the Agricultural Products Marketing System	113
Chapter 6. Social Overhead Capital	117
A. Current Status of North Korea's SOC	117

B. Problems of North Korea's SOC	145
Chapter 7. Commerce and Distribution Sector	149
A. Conditions in Commerce and Distribution by Category	149
B. Trends and Issues in Commerce and Distribution after the July 1 Economic Reform	157
C. Outlook	164
D. Conclusion	166
Chapter 8. The Defense Industry	169
A. Characteristics of North Korea's Defense Industry	169
B. The Process of Development and the Current Status of North Korea's Defense Industry	172
C. Problems and Future Direction of North Korea's Defense Industry	182

Part III. International Economic Activities

Chapter 9. Foreign Economic Relations	191
A. Foreign Trade	191
B. Attracting Foreign Capital and Foreign Economic Cooperation	200
Chapter 10. Special Economic Zones	208
A. Current Status of the New SEZs in North Korea	209
B. Developmental Potential of North Korea's SEZs	214
C. Obstacles to and Future Tasks for the Success of New SEZs	216
Chapter 11. Inter-Korean Economic Relations	224
A. Current Situation	224
B. Assessment of the Differing Positions of the South and North	230
C. Problems of South–North Economic Cooperation	231
D. Possible Solutions for Economic Cooperation	232
E. Other Instruments Needed	233
F. Outlooks	235

Part IV. Social Security and Technology Development

Chapter 12. Social Security and Social Services	239
---	-----

A. Structure and Contents of Social Welfare System	240
B. Problems of the Social Welfare System in North Korea	258
C. Concluding Remarks	261
Chapter 13. Science and Technology Sector	265
A. Analysis of the Current Status	265
B. Issues	278
C. Future Outlook	281

Part V. The Recent Economic Policy Changes

Chapter 14. The Contents and Background for the Recent Policy Changes	287
A. The Main Contents of Recent Economic Policy Changes	288
B. The Background for the Recent Economic Management Reform	303
C. Conclusion	309
Chapter 15. The Features and Problems of the Recent Economic Policy Changes	312
A. A Review of North Korea's Economic Policies Prior to the July 1 Reform	313
B. The Features and Problems of the July 1 Economic Management Reform	329
C. The Positive Aspects and Problems of North Korea's Recent Economic Policies	341
D. Conclusion	343
Chapter 16. Prospects and Future Tasks of the July 1 Economic Reform	347
A. Several Things to Consider	347
B. Meaning of the July 1 Economic Reform and the Key to Success	349
C. Policy Tasks for Economic Reform	353
D. Prospects for Reform and Tasks Ahead	358
E. Concluding Remarks: System Reform and System Transition	366

Tables

Table 1-1. National Per Capita Income Announced by North Korea	26
Table 1-2. Estimations of North Korea's GNI	27
Table 1-3. Comparison of the Size of the Economy and Per Capita GNI of North and South Korea	28
Table 1-4. Budget Status by Year	30
Table 1-5. Trends in North Korea's Trade	31
Table 1-6. Changes in Trade Volume with Main Trading Partners	32
Table 1-7. General Statistics for Trade between North and South Korea	33
Table 1-8. Annual Grain Production	34
Table 1-9. Production of Iron Ore and Coal	37
Table 1-10. Steel Production Capacity	40
Table 1-11. Production Volume of Chemical Fertilizers	42
Table 1-12. Crude Oil Imports	43
Table 1-13. Electrical Power Capacity and Actual Amount Generated	45
Table 2-1. Relative Proportion of Each Category in Budget Execution, 2002	52
Table 2-2. Changes in North Korea's Budget in the 2000s	52
Table 2-3. Budget Execution Plans According to Category	54
Table 2-4. Changes in North Korea's Military Expenditure (percentage of the total budget)	55
Table 2-5. Specific Content of the Issuance of the People's Life Bond	60
Table 3-1. Adjustment of Prices and Wages by the July 1 Economic Reform	79
Table 3-2. Changes in Relative Prices by Item after July 1, 2002	81
Table 4-1. Investment and Technology Improvement in North Korea's Heavy and Chemical and Mining Industries, 2002	91
Table 4-2. North Korea's Industrial Output	92
Table 4-3. Factories and Enterprises That Achieved Targets for First Half	93
Table 4-4. Light Industry Investment and Technology Projects in 2002	95
Table 4-5. Trends in North Korea's Energy Sector	97
Table 5-1. Yearly Status of North Korea's Food Supply	111
Table 6-1. Stated Goals for the Energy Sector	120

Table 6-2. Capacity of North Korea's Power Facility and Electricity Status by Year	121
Table 6-3. Construction of Small- and Middle-Sized Power Plants	122
Table 6-4. Hydroelectric Power Plants in North Korea	124
Table 6-5. Status of Thermal Power Generation in North Korea	125
Table 6-6. Comparison of Railways in South and North Korea	127
Table 6-7. Railroads of the West Lines	130
Table 6-8. Railroads of the East Lines	130
Table 6-9. Railroads of the East-West Lines	130
Table 6-10. Railroads of the Inland Lines	130
Table 6-11. Railroads of the West Circular Lines	131
Table 6-12. Progress of North Korea's Road Expansion	137
Table 6-13. Status of Road Extension by Level	138
Table 6-14. North Korea's Road Structure by Level	138
Table 6-15. Status of North Korea's Main Road Network	140
Table 6-16. Facilities of Major Trade Ports in North Korea	144
Table 7-1. Key Price Reform Measures	156
Table 7-2. Wage Increases by Occupation (Monthly)	157
Table 7-3. Prices in Pyongyang's Farmers' Market	163
Table 8-1. The Number of North Korea's Munitions Factories	175
Table 8-2. DPRK Ballistic Missile Characteristics	179
Table 8-3. The Current Status of Nuclear Weapons Materials in North Korea	181
Table 9-1. Trends in North Korean Foreign Trade	192
Table 9-2. North Korea's Main Export Products	194
Table 9-3. North Korea's Main Import Products	197
Table 9-4. North Korea's Ten Largest Trading Partners	199
Table 9-5. Foreign Investment Trends in North Korea, China, and Vietnam	201
Table 10-1. Main Contents of the Basic Laws of the Sinuiju Special Administrative District	213
Table 11-1. South-North Trade	225
Table 11-2. Enterprises and Approval for Businesses	226

Table 11-3. Humanitarian Aid to North Korea	230
Table 12-1. Criterion for Benefits of the Disability Pension	245
Table 12-2. Criterion for Benefits of the Survivor's Pension	246
Table 12-3. Criteria for Premium of Social Insurance in North Korea	247
Table 13-1. Growth of Employees at the KCC	271
Table 13-2. New Five-Year Plan for Science and Technology Development	275
Table 13-3. New Five-Year Plan for Science and Technology Development (Improving Public Welfare)	276
Table 13-4. New Five-Year Plan for Science and Technology Development (Basic/Advanced Technology)	276
Table 14-1. Price Increase after the July 1 Economic Reform	292
Table 15-1. Characteristics of North Korea's Typical Economic Management Policies	315
Table 15-2. Major Foreign Policies before the New Economic Policy	319
Table 15-3. Similarities and Differences between North Korea's Amendments (1998) and China's Amendments (1982)	324
Table 15-4. The Main Contents of the National Economic Plan Law	326
Table 15-5. The Price Adjustment of Major Goods	331
Table 15-6. The Changes in Market Price Functions in Each Product Categories in China	333
Table 15-7. A Ratio Between the Average Wage Increase, GNP, and the Labor Productivity (Increasing Rate of the Annual Mean)	336
Table 15-8. Comparison of China's Reform and Opening Measures and North Korean Economic Management Adjustment Measures	339

Figures

Figure 1-1. Growth Rate of the North Korean Economy	24
Figure 2-1. Process of Civil Accumulation of North Korean Currency	56
Figure 3-1. Circulation of Cash in North Korea's Conventional Banking System	70
Figure 8-1. The Locations of the Munitions Factories in North Korea	174
Figure 8-2. International Connections Relating to the Development of Ballistic Missiles in North Korea	178
Figure 13-1. Historical Trend of Research Institutes under the Academy of Sciences	269
Figure 14-1. The Structure of North Korea's Economic Collapse	305
Figure 15-1. North Korea's Trade Development with Its Major Trading Partners	314

Contributors

Ahn Byung-min is head of the Transport Policy and Market Analysis Division at the Korea Transport Institute. He holds a Ph. D. in Public Law from Tsukuba University in Japan. The focus of his research has been analysis of the North Korean transport and logistics system. His numerous publications on the topic include “Restoration of the Seoul-Shinuiju Line: Review and Outlook” (*East Asian Review*, 2002) and *A Study on the Role-Sharing Between Central & Local Government to Facilitate the Development of Transport System in South and North Korea Border Area* (KOTI, 2002).

Ahn Choong Yong is the president of the Korea Institute for International Economic Policy. He received his Ph.D. from Ohio State University. He was a professor in the Department of Economics at Chung-Ang University in Seoul. Dr. Ahn is currently serving as the Chair of the APEC Economic Committee and as a member of the Presidential Economic Advisory Council in Korea. He has written extensively on issues related to East Asian development and economic cooperation in the Asia-Pacific region. His recent publications include “A Search for Robust East Asian Development Models After the Financial Crisis: Mutual Learning from East Asian Experiences” (*Journal of Asian Economics*, 2001) and “Financial and Cooperate Sector Restructuring in South Korea: Accomplishments and Unfinished Agenda” (*Japanese Economic Review*, 2001). He was bestowed with the Okita Research Award from the National Institute for Research Advancement in Japan on the book, *Gendai Higashi Asia Geizairon* (Modern East Asia Economy), published by Iwanami Shoten in 2000.

Cho Myung-chul is a Research Fellow at the Korea Institute for International Economic Policy. He received his Ph.D. in economics from Kim Il Sung University in Pyongyang, North Korea and taught at there the same university between 1987 and 1994. His main research areas include North Korea’s current economic situation and problems, future directions for economic reform, inter-Korean relations and Sino-North Korea economic relations. His recent publications include: *Patterns and Performance of External Financing in Transitional Economics* (KIEP, 2000) and *The Current Status of Market Economy Education*

in North Korea and the Possible Measure of Inter-Korean Cooperation (KIEP, 2001).

Dong Yong-seung is a Chief of a North Korea research team at Samsung Economic Research Institute. He received his B.A. from Yonsei University. He has written several books on Intra-Korean economic cooperation, and his recent publications include *The Changes of North Korea's Economic Policy and Intra-Korean Economic Cooperation* (KorCham, 2002).

Hong Ihk-pyo is a Senior Researcher at the Korean Institute for International Economic Policy. He holds a B.A. and M.A. in Political Science from Hanyang University, Seoul. Specializing in the North Korean economy, his publications include *Early Policy of Reform and Opening in China and Vietnam and the Direction of Reform in North Korea* (KIEP, 2000) and *Expansion of Special Economic Zones in North Korea: Possibility and Direction* (KIEP, 2001).

Hong Soon-jick is a Research Fellow at Hyundai Research Institute, where he leads the team for North-East Asian Economic Analysis. He received his M.A. and has completed his Ph.D. degrees in economics at Chungang University in Seoul, Korea. While working at HRI, he has published numerous papers on the North Korean economy and South-North economic cooperation, including *North Korea's Reform/Opening and South-North Economic Cooperation* (HRI, 2003), *North Korea's Special Zone Policy: Evaluation and Tasks* (The Institute of North Koreanology of Korea University, 2003), *Development of the Kaesong Industrial Zone: Economic Effects and Tasks* (KOTRA, 2003), and *Hub Korea* (Keorum, 2003).

Kim Chul-whan is a professor of the Defense Science Division at the Korea National Defense University. He received a bachelor's degree in Engineering from Seoul National University (1974) and received his M.S. (1979) and Ph. D. (1982) in Materials Engineering from the School of Engineering at Purdue University. He published several articles on science and technology in the national security areas, and also published several books on weapons system acquisition and defense research and development. His recent publications include "A Study on the Strategy and Plan for the Interchange & Cooperation of Science Technology between the South and North Korea" (*Journal of National Defense Studies*, 2001).

Kim Keun-sik is a Research Professor at the Institute for Far Eastern Studies, Kyungnam University. He received his Ph. D. in political science from Seoul

National University. His main area of research major subject is North Korean politics and economy. He has written extensively on North Korea's political economy, and his recent publications include "The Change in North Korea's Party-Government-Military Relationship in the Kim Jung-Il Era: The Implications of the Change of the 'Great Leader' (Suryong) System,"(*Korean Political Science Review*, 2002); "The Humanitarian Aid for the North Korea and 'South-South Conflict': Focusing on the 'Giveaways' Criticism,"(*The Korean Journal of Unification Affairs*, 2002); The Kim Dae-jung Government's Sunshine Policy: Evaluation and Prospects,"(*Korea and World Politics*, 2002).

Kim Woon-keun is a President of Korea Peninsular Agro-fishery Policy Research Institute. Before joining KAPRI, he worked at Korea Rural Economic Institute. He received a Ph.D. in Economics from Korea University. He has written extensively on North Korea's agricultural economic relations, and my recent publications include "Evaluation of Agricultural Productivity in North Korea"(*Journal of Agricultural Economics*, 1993); and "Assessing the Food Situation in North Korea" (*Economic Development and Cultural Change*, 1998)

Kim Young-yoon is a senior Research Fellow at the Inter-Korean Economic Affairs Division, Korea Institute for National Unification. His areas of expertise include North Korean Economy and economic integration between South and North Korea. His current research interests include German unification and economic development of North Korea. Recently he has published "*The Study on Reform Direction of North Korea Collective Farm*" (KINU, 2002), "*Strategy for Marketization of North Korea*" (KINU, 2002) and "*Evaluation for the July 1 Economic Management Reform of North Korea*" (KINU, 2003). He received his Diplom-Oekonom and Dr. rer.pol. from the University of Bremen, Germany.

Lee Chan-woo is a Program Officer and Senior Researcher at the Sasakawa Peace Foundation (SPF) in Tokyo, Japan since April 2003. Before joining the SPF, he worked at the Economic Research Institute for Northeast Asia (ERINA) in Niigata, Japan. He also has also experience of working at Daewoo Economic Research Institute in Seoul from April 1996 until May 1999. He has written on the DPRK's domestic economic situation and external economic relations including inter-Korean economic relations. His recent publications include "Economic Relations between Japan and the DPRK and Economic Cooperation in Northeast Asian Region"(*Proposals to Northeast Asian Age*, 2003) and "Ten Years of Tumen River Area Development: Evaluation and Issues"(*ERINA BOOKLET*, 2003).

Lee Choon-geun is a Research Fellow at the Science & Technology Policy Institute (STEPI). Before joining STEPI, he worked at the Peking University at Beijing, China. He received his B.A. and Ph. D in engineering from Seoul National University and another Ph.D. in education from Beijing Normal University in China. He has written extensively on North Korea's science & technology relations, and his recent publications include *"The National R&D System and Human Resources Training System in North Korea"* (STEPI, 2001) and *"The Strategies for Promoting S&T Cooperation with North Korea"* (STEPI, 2002).

Lee Jong-woon is a researcher at the Korea Institute for International Economic Policy. He studied international development at Saint Mary's University and the University of Toronto. He has written extensively on the dynamics of North Korea's economic transition and its foreign economic relations. His recent publications include "North Korea's Information and Communications Technology: Status, Potential, and Constraints" (*Asian Profile*, 2004) and *North Korea's Economic Reform Under An International Framework* (KIEP, 2004)

Lee Sam-sik is a Senior Researcher at the Korea Institute for Health and Social Affairs. He currently serves as a member of the National Pension Finance Analysis Committee for the South Korean government. The focus of his research has been the sociological and demographic analysis of social phenomenon and social welfare. His other research interests include reproductive health, specifically for adolescents. He has published numerous articles on these topics, and his publications include *Demographic Dynamics in North and South Korea and Socio-demographic Policy Issues under Reunification* (Korea Institute for Health and Social Affairs).

Lee Seog-ki is a Research Fellow at Korea Institute for Industrial Economics and Trade. He received his B.A. and Ph.D. in Economics from Seoul National University. He has written extensively on North Korea's economy and inter-Korean economic cooperation. His recent publication includes *North Korea's Industrial and Enterprise Management System* (co-work, 1998), *Approaches to Inter-Korean Economic Cooperation* (co-work, 2000), *North Korea's Economic Crisis in 1990 and Behavioral Changes of Enterprise-Survival Pursuit Type Insider Control and Regressive Marketization* (Ph.D. Thesis, 2003).

Park Suhk-sam is senior economist at the North Korean Economic Studies Section, Institute for Monetary & Economic Research, the Bank of Korea. He received his master's degree in economics from Korea University and studied at

the University of Texas at Austin (Ph.D. a.b.d). The focus of his research has been on the North Korean economy, intra-Korean economic cooperation. He has published numerous articles including “North Korean Banking System: Today and Tomorrow” (*the Journal of Economic Policy*, 2002), *Studies of the North Korean Private Economy* (2002), *Analysis on Inter-industrial Effects of South Korea's Infrastructural Investment in North Korea* (2000).

Yoon Deok-ryong is a Research Fellow at the Korea Institute for International Economic Policy. Before joining KIEP, he worked at the Korea Economic Research Institute under the Federation of Korea Industries. He received his Ph.D. in economics from Kiel University in Germany. Besides numerous papers and books, he is the author of *Economic Cooperation and Unification Costs* (Samsung Economic Research Institute, 1998) and “Asian Monetary Cooperation: A Search for Regional Monetary Stability in the Post-Euro and the Post-Asian Crisis Era” (*Economic Papers*, 2000). Recently he has published *Searching for a Better Regional Surveillance Mechanism in East Asia* (KIEP, 2002)



Part I

Macroeconomic Status and Finance

Chapter 1

Current Status of the North Korean Economy and Its Prospects

A. Macroeconomic Status

1. Economic Growth Rate and National Income

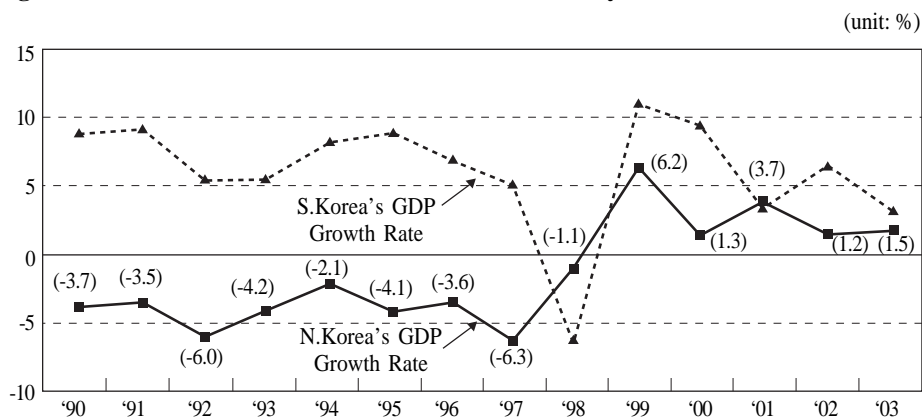
In 2003, despite internal reforms aimed at economic revitalization, North Korea could not achieve its goal of resolving its economic hardship. North Korea has been unable to maintain enthusiastic economic aid and foreign investment from Western nations and the international community because of its lack of progress in improving its foreign relations, which stems from the revelation of its nuclear development program. The growth rate of the North Korean economy in 2003 is estimated to be below 1.5 percent, which is similar to the rate of economic growth in 2002 of 1.2 percent. This situation can be considered somewhat positive, because the North Korean economy has shown positive growth for the five years since 1999. However, considering the serious economic crisis in which the North Korean economy currently finds itself, this level of growth is rather insignificant. In addition, rates of growth in 2002 and 2003 were considerably smaller than the growth rate of 3.7 percent in 2001. Therefore, it is still too early to conclude that the North Korean economy has truly entered a phase of recovery.

In 2002, owing to favorable weather conditions and increases in purchase prices, the agriculture, forestry, and fishing sectors, which make up a significant portion of the North Korean economy, reported a 4.2 percent growth rate. Growth continued in 2003 at 3 percent. In 2002, the construction industry grew a marked 10.4 percent, centering on residential constructions, and led the growth of the country's economy. The growth of the construction industry is expected to con-

tinue because the national budget for construction and city management has been increased by 10.6 percent over that of the previous year. A large portion of the revenue from government bonds has been committed to the construction industry. However, in 2003, as in 2002, the manufacturing, mining, electricity, gas, water, and government service sectors, which make up a large portion of the North Korean economy, shrank because of the shortage of energy and raw materials. This outcome has posed obstacles to economic rehabilitation. Especially since the Korean Peninsula Energy Development Organization (KEDO) cut off its crude oil supply to North Korea, decreases in industrial productivity and the dwindling of the service industry from energy shortages have become very apparent.

In the meantime, North Korea's July 1 Economic Reform of 2002 has not led to an increase in the productivity of industry overall because of chronic shortages of materials and the deterioration of the conditions for foreign economic cooperation after the nuclear crisis. However, the measures have served to raise the level of motivation in North Korean firms, laborers, and citizens, and those measures are considered to have invigorated the labor-intensive light industry and commercial distribution industry.

Figure 1-1. Growth Rate of the North Korean Economy



In North Korea, the concepts of gross social product (GSP) and net material product (NMP) are used as indices of the net economy. Gross social product refers to “the summary of the total material wealth produced by all production sectors of the society on a pan-social scope.”¹ That is, GSP is the society's total

¹ Social Sciences Publishing (1995, 688).

amount of production generated by the labor of workers engaged in production sectors such as manufacturing, agriculture, and construction. Therefore, nonproduction-based service sectors such as education, science, and the arts are not included in the concept of GSP.²

The actual elements of GSP are the means of production and consumer products. The form of value of GSP consists of the means of production consumed during the manufacturing process, or it consists of the newly created value and labor.³

However, NMP is defined as “the amount that remains after the consumed means of production has been subtracted from the GSP; thus, it is the newly created value of a given year.” Therefore, the national income is the amount that remains after the fixed capital appropriate for compensating for depreciation and for the cost of inputting intermediate goods is subtracted from the GSP. In light of those definitions, the North Korean concept of national income is different from that used by nations with market economies. Moreover, there is difficulty in accurately assessing North Korea’s national income because of the lack of basic data (transaction revenues, scope of subsidies, production yield, etc.) necessary for drawing up statistics. In particular, North Korea is not even properly announcing its national income, and the occasional announcements of the national per capita income are willfully fabricated for political purposes.

For instance, in May 1997, when North Korea’s membership fees to the United Nations (UN) were being assessed, contrary to what it had done in the past, North Korea dramatically lowered its statistics for the national per capita income for the period from 1995 to 1998 and submitted those figures to the UN Budget and Finance Committee, all in order to decrease its membership dues. A year later, in 1998, to acquire financial aid from international organizations such as the United Nations Development Programme (UNDP) and the International Monetary Fund (IMF), North Korea reported a somewhat inflated national per capita income for the five-year period from 1991 to 1996 compared with that submitted to the UN Budget and Finance Committee. Although those data come from the same source, the Choson Central Bureau of Statistics, they vary depending on purpose, timing, and to whom they are targeted.⁵ (See Table 1-1.)

² It would be inaccurate to say that North Korea’s GSP includes only commodity production and excludes all service sectors. Rather, it is more accurate to say that nonproductive service industries are not included. For example, some production in nonproduction-based sectors such as science, education, the arts, and health are included. Also, the transportation and communication of goods and trade are service sectors that are included in GSP.

³ *Ibid.*, 688–89.

⁴ *Ibid.*, 168.

⁵ Ministry of Unification (2003, 156).

Table 1-1. National Per Capita Income Announced by North Korea

Year	Per Capita Income	Basis
1946	64.44 won	Deduced from “Income in 1967 is 9 times that of 1946”
1949	131.82 won	Deduced from “Income in 1967 is 4.4 times that of 1949”
1962	416.67 won	Deduced from “Income in 1962 is 1.2 times that of 1962”
1966	500.00 won	The first round of the 4th Supreme People’s Assembly (16 December 1967)
1967	580.00 won	Reported by <i>Korean Central Broadcasting Station</i> (17 September 1979)
1970	605.30 won	Deduced from “Income in 1970 is 9.4 times that of 1946”
1974	1,029.75 won	Deduced from “Income in 1974 is 1.7 times that of 1970”
1979	\$1,920	Kim Il-sung’s New Year’s speech (1 January 1980)
1982	\$2,200	Kim Woo-jong, Vice Chairman of Society for Cultural Relations with Foreign Countries (12 September 1983), press conference with Japanese reporter
1986	\$2,400	Bang Wan-joo (1998), <i>Abstract on North Korea</i> .
1987	\$2,400	Lee Myung-so, professor of sociology, press conference with Western reporters (September 1988)
1988	\$2,530	<i>New York Times</i> (July 1987). An article dispatched to North Korea
1988	\$868	Material submitted by the North Korean delegation to the Budget and Finance Committee at the 57 th UN General Assembly (May 1997)
1989	\$911	Material submitted by the North Korean delegation to the Budget and Finance Committee at the 57 th UN General Assembly (May 1997)
1990	\$835	Material submitted by the North Korean delegation to the Budget and Finance Committee at the 57 th UN General Assembly (May 1997)
1991	\$2,460	Kim Jung-woo, Assistant Head of the Ministry of Foreign Economic Affairs, press conference with Japanese reporter (Yonhap News Agency, 24 February 1992)
1992	\$659	Kim Jung-woo, Assistant Head of the Ministry of Foreign Economic Affairs, press conference with Japanese reporter (Yonhap News Agency, 24 February 1992)
1992	\$1,005	Material submitted to UNDP and IMF (May 1997)
1993	\$547	Material submitted by the North Korean delegation to the Budget and Finance Committee at the 57 th UN General Assembly (May 1997)
1993	\$994	Material submitted to UNDP and IMF (May 1998)
1994	\$432	Material submitted by the North Korean delegation to the Budget and Finance Committee at the 57 th UN General Assembly (May 1997)
1994	\$721	Material submitted to UNDP and IMF (May 1998)
1995	\$239	Material submitted by the North Korean delegation to the Budget and Finance Committee at the 57 th UN General Assembly (May 1997)
1995	\$590	Material submitted to UNDP and IMF (May 1998)
1996	\$481	Material submitted to UNDP and IMF (May 1998)
1998	\$467	Material submitted to the APEC ministerial meeting (January 2001)

Source: 1. *Choson Joongang Nyungam* (1970), 276.
 2. *Choson Joongang Nyungam* (1968), documentary records issue, 2.
 3. *Choson Joongang Nyungam* (1974), 242.
 4. *Choson Joongang Nyungam* (1976), 371.

Note: The won is the North Korean currency.

At South Korean and other foreign specialized research institutes, North Korea's gross national income (GNI) and per capita GNI,⁶ which correspond to the capitalist concept of national income, are estimated using the inconsistent data published by North Korea and modern measurement devices (satellite images, etc.). However, not only are GNI and per capita GNI themselves difficult to assess, but also there are debates on whether they are indexes that can accurately evaluate the citizens' welfare or the status of the income distribution of a nation. The general assessment is that calculating the national income of North Korea, whose economic system and theories are so different from those of other nations, according to extremely limited data is extremely difficult and prone to error.

Therefore, it is important to be aware that there is a definite limitation in the evaluation of North Korea's general welfare or in the comparison of the economic power of North and South Korea using North Korea's GNI or per capita GNI. Recently, the Bank of Korea has been publishing the estimated level of North Korea's national income using the UN citizen accounts system. The Bank of Korea's published estimates of North Korea's GNI and per capita GNI so far are as listed in Table 1-2.

Table 1-2. Estimations of North Korea's GNI

	1975	1980	1985	1990	1995	2000	2001	2002
GNI (\$100 million)	94	135	151	231	223	168	157	170
Per Capita GNI (\$)	579	758	757	1,142	1,034	757	706	762

Sources: Data before 1985 are based on the estimates of the Ministry of Unification, and data after 1990 are drawn from the Bank of Korea (various issues).

According to the Bank of Korea's statistics, North Korea's 2002 GNI is shown to be \$17 billion, and its per capita income, \$762. The GNI is 1/28 of that of South Korea and the per capita GNI is only 1/13 of that of South Korea. Also, the size of the North Korean economy (categorized GNI) and per capita GNI in 2002 have decreased 26 percent and 33 percent, respectively, from 1990. (See Table 1-3).

⁶ GNI was developed in 1993 and has been used mainly by the UN to accurately reflect the income level; a revised system has been implemented since 1998.

Table 1-3. Comparison of the Size of the Economy and Per Capita GNI of North and South Korea

	North Korea (A)		South Korea (B)		B/A (ratio)	
	2001	2002	2001	2002	2001	2002
Categorized GNI (1 billion won)	20,287.0 (6.9)	21,330.7 (5.1)	550,014.4 (5.9)	596,881.2 (8.5)	27.1	28.0
Per Capita GNI (10,000 won)	91.2	95.4	1,161.8	1,252.9	12.7	13.1
Population (1,000 people)	22,253	22,369	47,343	47,640	2.1	2.1

Note: The figure in () is the ratio of increase or decrease from previous year (percent).

2. Size of Economy

Since 1994, the national budget, which made up the largest portion of North Korea's GNP, has decreased significantly. This decrease shows that North Korea's economic crisis is extremely grave. For political reasons, North Korea is publishing only the expected national revenue and the amount of energy expenditure in a net gross format or as a comparative ratio against the figures from the previous year. For example, in 2003, specific results of the previous year's budget execution and 2003's budget plans were not revealed; the figures were reported only as increased ratios against the previous years' figures.

In 2003, North Korea's national budget showed a high increase of 13.6 percent in revenue and 14.4 percent in expenditure. The 2003 budget increase phenomenon has been the highest budget increase since 1974, which saw a 16.3 percent actual increase from the previous year. However, in 2003, unlike in previous years, North Korea neither presented in detail the entire scope of the budget, nor specified the particulars of each category.⁷

The transaction income, which made up the largest portion of the financial income, was not presented. Instead, the income from land use fees was presented as a category, which demonstrates that since the Economic Reform of July 1, in the budget income category, land use fees have made up the largest portion. When examining the budget income by items of expenditure, profits made by state enterprises rose 5 percent from the previous year, profits made by

⁷ At the sixth round of the Tenth Supreme People's Assembly (26 March 2003), without presenting specific numerical values, North Korea announced that the results of the 2002 budget execution showed that the expenditure was at 99.8 percent of what had been planned and that the 2003 expenditure budget would increase by 14.4 percent from that of the previous year.

cooperative organizations rose by 3.3 percent, social insurance income rose by 6.7 percent, and land use income rose by 3.7 percent.

In terms of expenditure, only the proportion for military expenditure was presented, while the proportions representing the people's economic expenses and people's policy expenses were not revealed. In other words, only the proportions of total expenditure representing sectors of strategic national interest were presented. Examination of itemized budget expenditures shows increases of 15.4 percent in military expenditure, 112.8 percent in the energy sector, 130 percent in the coal industry sector, 121.3 percent in the agricultural sector, 112.4 percent in the light industry sector, 115.7 percent in the science and technology sector, and 118.5 percent in the land construction sector. Within the people's policy expense, expenditure has increased by 115.3 percent in the education sector, 114.4 percent in the arts and culture sector, and 106.6 percent in the healthcare sector from the previous year.

In the meantime, when the accounts settlement of the 2002 budget is examined, it is shown that the actual income was recorded at 100.5 percent and the actual expenditure was at 99.8 percent of what had been planned. Upon examination of the itemized budget expenditure details, only the people's economic expense at 22.7 percent and the military expenditure at 14.9 percent have been announced. The people's policy expense and the proportion of the total expenditure taken up by the national management expense, which normally had been reported, were not referenced. According to statistics, North Korea's 1999 budget was half of the net budget income in 1994 of 41.6 billion won. In particular, during the four-year period from 1994 to 1998, the budget decreased at an average of 6.6 percent every year. This decrease is thought to have resulted from the dramatic decrease in the proportion taken up by the national budget in the object-economy caused by the collapse of the food and basic commodities distribution system. In addition, it has been shown that income and expenditure recorded a deficit from 1998 until 2001 but that a narrow gain was realized between 2002 and 2003. (See Table 1-4.)

The distinctive feature of North Korea's state finances in 2002–2003 is that while military expense was on the rise again, the national management fee decreased. When the proportion of military expense in the annual expenditure budget was examined, it topped 30 percent in 1967; rapidly decreased to less than 20 percent after the start of the North–South talks in 1972; and since 1990, has been announced at a lowered level of 12 percent. However, the proportion of military expense for 2000 was increased and fixed at 14.5 percent at the second round of the Tenth Supreme People's Assembly (7 April 1999). It has maintained a 14–15 percent level ever since. This increase is thought to show North Korea's intention to prepare for the North Korea–United States antagonism,

Table 1-4. Budget Status by Year

(unit: 10,000 North Korean won)

Year	Annual Revenue	Annual Expenditure	Details on Expenditure by Category			
			People's Economic Expense	Social Service Expense	Military Expense	Management Expense
1965	357,384	347,613	236,376	68,422	27,809	15,006
1970	632,220	600,269	282,126	119,394	187,884	10,805
1975	1,158,630	1,136,748	650,688	275,762	186,427	23,872
1980	1,193,923	1,883,691	1,139,777	417,434	275,019	51,461
1985	2,743,887	2,732,883	1,762,789	535,387	393,535	41,172
1990	3,569,041	3,551,348	2,399,145	669,279	426,162	56,762
1991	3,719,484	3,690,924	2,504,707	692,704	446,602	46,911
1992	3,954,042	3,930,342	2,662,504	750,891	448,058	68,879
1993	4,057,120	4,024,297	2,929,067	765,908	462,794	66,528
1994	4,160,020	4,144,215	—	—	472,440	—
1998	1,979,080	2,001,521	—	—	292,222	—
1999	1,980,103	2,001,821	—	—	290,264	—
2000	2,090,343	2,095,503	840,297	800,482	299,657	155,067
2001	2,163,994	2,167,865	917,007	825,956	312,172	112,729
2002	2,328,247	2,173,031	—	—	—	—
2003	2,518,942	2,536,681	—	—	—	—

Source: The figures are based on the North Korean government's annual reports on budget implementation by year. Data for 2003 are an expected estimate.

which has intensified over the nuclear issue.

3. Trade Volume

In 2003, North Korea's foreign relations environment had deteriorated because of the nuclear crisis. However, despite this difficulty, external trade had increased by 3.8 percent from the previous year to \$2.34 billion, thanks to increased trade with China and other major trading partners. Data on North Korea's 2003 trade income and expenditure show that while exports have increased by 27.4 percent from the previous year, totaling \$910 million, imports increased by 6.2 percent, totaling \$1.43 million. Therefore, North Korea's 2003 trade deficit had decreased to \$520 million from 2002's \$790 million.

When trade with main trading partners is examined, one sees that while trade with China had increased by 19.2 percent from the previous year at \$880 million, trade with Japan had decreased 26.2 percent to \$270 million. Trade with those

two nations made up 49.2 percent of North Korea's net trade volume. Currently, North Korea's main export items to China are marine products, apparel, and steel; its main import items from China are mineral energy, grains, and electric machinery and tools. In the meantime, North Korea's main export items to Japan are marine products, apparel, and electronic and electric products. Its main import items from Japan are automobiles, electric machinery and tools, wool products, and artificial fibers.

With 2002 as a reference, North Korea's trade volume is about \$2.26 billion, with exports making up 4.3 percent and imports making up 7.0 percent of the GNI. Thus, North Korea's trade dependency is 13.3 percent.⁸

North Korea's trade history shows an overall increasing trend from the 1950s to the late 1980s. Especially in the late 1980s, trade volume increased to 6.6 times that of 1970. However, trade instability was also evident in the process. In the mid-1970s, North Korea went through various ups and downs. The oil crisis and the decline of the international price of nonferrous metals (North Korea's main export item) made it difficult for North Korea to repay foreign debt, leading to a dramatic decrease in imports. Also, in the early 1980s, there was overall stagnation in trade because of problems with repaying debt to Western nations, the drop in prices of minerals (North Korea's main export item), and the lack of foreign currency.⁹ For instance, the export volume in 1985 had decreased 26.6 percent from that of 1980, and the import volume had decreased 4.1 percent. The steep declines in North Korea's exports were mainly caused by the decreases in exports to Western nations, which resulted from the production crisis. (See Table 1-5.)

Table 1-5. Trends in North Korea's Trade

(unit: \$100 million, %)

	1970	1980	1990	1995	1998	2000	2001	2002	2003
Export	3.4	15.7	19.6	7.4	5.6	5.6	6.5	7.3	9.1
Import	4.0	18.8	27.6	13.1	8.8	14.1	16.2	15.3	14.3
Total	7.4	34.5	47.2	20.5	14.4	19.7	22.7	22.6	23.4
Percent Increase	9.1	16.6	3.2	△5.3	△11.3	33.1	15.1	△0.4	△3.8

Source: Results of the Ministry of Unification and Korea Trade-Investment Promotion Agency estimation.

Note: Percent increase is the average annual increase per period.

⁸ Ministry of Unification (2003).

⁹ *Ibid.*

North Korea's trade volume has been decreasing each year since 1988's \$5.24 billion. The reason for this decrease is that trade with Russia, which had been North Korea's largest trading partner, has virtually ceased. Also, with the collapse of the socialist economic system in the early 1990s, the supply lines of strategic resources and the export market for North Korean goods were destroyed. Consequently, domestic industrial production rapidly diminished. However, since 2000, North Korea's trade volume has been gradually increasing. Currently, the country is maintaining about a \$2 billion trade volume. (See Table 1-6.)

Table 1-6. Changes in Trade Volume with Main Trading Partners

(unit: \$100 million)

		1990	1998	1999	2000	2001	2002
China	Total	4.8	4.1	3.7	4.9	7.4	7.4
	Export	1.2	0.6	0.4	0.4	1.7	2.7
	Import	3.6	3.5	3.3	4.5	5.7	4.7
Japan	Total	4.8	3.9	3.5	4.6	4.7	3.7
	Export	3.0	2.2	2.0	2.6	2.2	2.3
	Import	1.8	1.7	1.5	2.0	2.5	1.4
Russia	Total	25.7	0.6	0.5	0.5	0.7	0.8
	Export	10.5	0.1	0.1	0.1	0.1	0.1
	Import	15.2	0.5	0.4	0.4	0.6	0.7
Others	Total	11.1	5.8	7.1	9.7	9.9	10.7
	Export	5.5	2.7	2.6	2.6	2.5	2.2
	Import	5.6	3.1	4.5	7.1	7.4	8.5

Source: KOTRA.

A large portion of North Korea's recent external trade volume consists of trade with South Korea. Trade between North and South Korea has shown consistent progress in terms of quantity and quality for the fifteen years since the implementation of the July 7 Special Declaration in July 1988 and the Guidelines for inter-Korean Trade of Goods, which was announced the same year. The actual inter-Korean trade in 2003 was recorded at about \$724 million, a 12.9 percent increase from 2002's \$640 million. In terms of North Korea's external trade, trade with South Korea makes up the second largest component after that with China. In 2003, the amount imported to North Korea was \$290 million, a 6.5 percent increase from the previous year, and the amount exported from North Korea was \$434 million, a 17.5 percent increase from the previous year.

Since 2002, inter-Korean trade has surpassed North Korea-Japan trade and South Korea has become and remained North Korea's second largest trading partner. Since the beginning of inter-Korean trade, up to the end of 2003, the net

volume of inter-Korean trade has reached \$4.3 billion. It is projected that if the North Korean nuclear crisis is resolved peacefully and institutional mechanisms necessary for inter-Korean trade are established, inter-Korean trade will show an even greater growth rate. Since the beginning of North-South trade, up to the end of 2003, South Korea has imported about \$2.36 billion worth of goods and exported about \$1.55 billion worth of goods. From the start of inter-Korean economic cooperation until 1997, the trade dynamic was one of exclusive imports by South Korea. However, since 1998, with the various economic cooperation projects such as (a) export processing, (b) South Korea's sending of food and other aid commodities to North Korea, and (c) the Mt. Kumgang tourism development project, South Korean exports to North Korea greatly increased and exceeded the amount of imports from North Korea.¹⁰ The figure for the 2003 nominal income and expenditure shows that South Korea is in the black by

Table 1-7. General Statistics for Trade between North and South Korea

Year	Import			Export			Total		
	No. of Transactions	No. of Items	Amount (\$1,000)	No. of Transactions	No. of Items	Amount (\$1,000)	No. of Transactions	No. of Items	Amount (\$1,000)
1989	66	24	18,655	1	1	69	67	25	18,724
1990	79	23	12,278	4	3	1,188	83	26	13,466
1991	300	43	105,719	23	16	5,547	323	57	111,266
1992	510	69	162,863	62	25	10,563	572	92	173,426
1993	601	69	178,167	97	37	8,425	698	103	186,592
1994	827	80	176,298	495	67	18,249	1,322	158	194,547
1995	1,124	109	222,855	2,720	166	64,436	3,844	243	287,291
1996	1,648	128	182,400	2,980	166	69,639	4,628	256	252,039
1997	1,806	142	193,069	2,185	281	115,270	3,991	362	308,339
1998	1,963	135	92,264	2,847	376	129,679	4,810	445	221,943
1999	3,089	171	121,604	3,421	404	211,832	6,510	487	333,437
2000	3,952	204	152,373	3,442	526	272,775	7,394	576	425,148
2001	4,720	200	176,170	3,034	490	226,787	7,754	545	402,957
2002	5,023	202	271,575	3,773	493	370,155	8,796	568	641,730
Total	25,708		2,066,292	25,804		1,504,613	50,792		3,570,905

Source: Ministry of Unification.

Note: 1. Based on South Korea's export and import.

2. Rice aid to North Korea amounting to \$237.21 million excluded from 1995 trade amount.

¹⁰ *Ibid.*

about \$146 million while the figure for actual income and expenditure, minus nontrade exchanges, shows that North Korea is in the black by about \$170 million. (See Table 1-7 for general statistics.)

B. North Korean Economic Trends by Sectors

1. Agriculture

North Korea's 2003 agricultural production is estimated at 4.25 million tons, about 3 percent more than 2002's production of 4.13 million tons. This increase is attributed to (a) fair weather conditions, (b) South Korea's fertilizer aid, and (c) an increase in farmers' motivation because of higher government procurement prices. However, considering that North Korea's grain consumption in 2004 will be 0.32 million tons, agricultural production still cannot meet demands; even in 2004, more than 2 million tons of food will need to be procured from abroad.¹¹

Table 1-8. Annual Grain Production

(unit: 10,000 tons, common grain standard)

1995	1996	1997	1998	1999	2000	2001	2002	2003
345	369	349	389	442	359	395	413	425
(121)	(134)	(150)	(146)	(162)	(142)	(168)	(173)	

Source: Estimates from the Ministry of Unification/Rural Development Administration.

The productivity of North Korea's agricultural sector has been greatly diminished by overarching reasons, such as (a) the uniform application of collectivization, (b) the *Juche* farming methods, and (c) the lack of agricultural infrastructure and farming resources. Large-scale flooding in the mid-1990s and the drought that followed dramatically lowered the level of food production and caused mass starvation.

North Korea has promoted the goal of self-sufficiency in food production. To realize this goal, the country pursued the irrigation, electrification, mechanization, and chemicalization of agriculture. At the twelfth round of the fifth general meeting of the party's central committee in October 1976, the Five General Mea-

¹¹ Grain consumption in North Korea for 2003 would be 5.42 million tons if supplied at the 22 percent reduced supply standard of 564 grams per adult. At the normal supply standard of 700 grams per adult, 6.32 million tons would be needed.

asures for Environmental Reorganization was decided upon,¹² and long-term environment reorganization projects for increasing crop production began. At the fourth round of the sixth meeting of the party's central committee in October 1981, the Four General Measures for Environmental Reorganization was proposed, which included the following content: (a) reclaiming 300,000 *jeongbo* (1 *jeongbo* = c. 99 acres) of dry beach, (b) finding of 200,000 *jeongbo* of new land, (c) constructing the Nampo Water Gate, and (d) developing the Taecheon Nuclear Energy Plant.

Currently, North Korea's agricultural industry has been focused on its mechanization, modernization, and transformation into an information-based system. There has been an emphasis on science in land reorganization, on expansion of the irrigation system, on projects for creating agricultural foundation, and on farming. North Korea has set a goal of reorganizing a total of 1.8 billion *pyong* of land nationwide. Since October 1998, starting from Kangwon Province and moving to North Pyongan Province, South Hwanghae Province, and South Pyongan Province, a transregional land reorganization campaign has been under way. The accomplishment thus far has been the near completion of the South Pyongan Province Pyongyang-si/Nampo-si land reorganization project—a total of 270 million *pyong* of land. The project began in early 2002. Moreover, as a part of the irrigation system restoration project for the South Pyongan Province, North Korea received a loan from the Organization of Petroleum Exporting Countries (OPEC) and completed construction on the Kaecheon–Lake Taeseong Waterway in October 2002. Subsequently, to restore the irrigation system in North Pyongan Province, work on the Baekma–Cheolsan Waterway, which is planned to be completed by 2006, began in May 2003.¹³ In terms of livestock farming, North Korea has been concentrating mostly on construction of goat farms and goat milk processing plants in 2003. North Korea built a total of 100 goat farms during the past seven years and increased the number of goats being bred by 3.8 times. The results of the marine products industry and forestry in 2003 were similar to those of the previous year.

2. Mining Industries

In North Korea, the extraction industry is considered to play the most pivotal

¹² “Five General Measures for Environmental Reorganization” refers to (a) completion of field irrigation, (b) land reorganization/land reform, (c) construction of multi-tiered fields, (d) flood control forestation, and (e) reclamation of dry beaches.

¹³ Ministry of Unification (2003).

role in the self-reliant economic policy. North Korea's extraction industry is "the entirety of all manufacturing sectors that produce raw materials and fuel,"¹⁴ including coal manufacturing, mining, oil and natural gas extraction, forestry, and fishing, with coal manufacturing and mining forming its core. North Korea has proposed three rules for the development of the extraction industry. First is the strengthening of geological explorations for the development of new coal mines and mine fields. Second is the technological revolution in gallery excavations and the extraction process. Third is the promotion of scientific research projects related to excavation equipment and exploration.

In 2003, North Korea increased investment in the coal manufacturing industry by 30 percent over the previous year and concentrated its resources toward resolving the energy (power and fuel) crisis. The central government's Central Bureau of Coal Manufacturing Industry announced that it would develop some 230 new small- to mid-sized coal mines around the nation by July 2003. In Sunchon, Kaechon, and Kangdong regions, which are known to house the largest coalfields, some forty small- to mid-sized coal mines have been developed and made operational. Some ten to twenty small- to mid-sized coal mines have also been newly developed and made operational in Pyongyang and Kangso districts.

In the mineral industry in 2003, however, despite adding mines to existing large-scale mines or expanding their facilities, actual profits are shown to be minimal. As an example, on 29 August the mine unit in Gumdeck mine began its operations (1 May 2003, *Rodong Sinmun*), seven drains including thirteen circular drains were repaired (11 November 2003, *Rodong Sinmun*), Ryanggangdo mine was repaired and expanded (10 August 2003, *Rodong Sinmun*), and Hyesan mine began its operation (31 August 2003, *Korean Central Broadcasting Station*). Also, various other projects, including the opening of Sangwon Cement Factory's lime mine, were pursued. But in general, the lack of financial resources and the depletion of natural resources from long-term excavation have brought the development of mines to its limit.

A general survey of North Korea's natural resources has so far confirmed the existence of a total of about 360 types of mineral resources; of those, some 200 are useful minerals with economic value. For seven of those minerals, such as tungsten, molybdenum, graphite, barite, and fluorite, North Korea's world market share is within the top ten.¹⁵ For magnesite, North Korea's international market share is the largest. Because of its abundance of metals and energy

¹⁴ Encyclopedia Publishing (1996, 382).

¹⁵ Ministry of Unification (2003).

minerals, 70 percent of the nation's fuels, including industrial fuels, are supplied domestically. However, oil, which is the basic resource for the chemical and energy industries, has not yet been discovered. Also, while there is an abundance of anthracite coal and brown coal, there is very little bituminous coal, which is absolutely necessary for the iron and steel industries, so its entire supply depends on imports. (See Table 1-9 for annual production of iron ore and coal.)

Table 1-9. Production of Iron Ore and Coal

(unit: 10,000 tons)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Iron Ore	476.3	458.6	422.1	344.0	291.0	289.0	379.3	379.3	420.8	407.8
Coa	12,710	2,540	2,370	2,100	2,060	1,860	2,100	2,250	2,310	2,190

Source: Bank of Korea.

Through the continual expansion and development of iron ore mines, the production of iron ore had been increasing annually by 2 percent since the 1970s. In the 1990s, however, not only did the exploration and development of iron ore mines stagnate, but also existing equipment became outdated. Consequently, there has been a rapid decrease in production volume. Iron ore production, which had reached 9 million tons in 1989, fell to 2.89 million tons in 1998, rising back to only 4.08 million tons by 2002.¹⁶

North Korea's net coal deposit is 14.7 billion tons. It is known that some 7.9 billion tons of it can be mined. Massive amounts of anthracite coal are deposited in Sunchon, Dukchun, Kangdong, and Kaechon-*gun* of South Pyongan Province; Kujang of North Pyongan Province; Kowon of South Hamgyong Province; Chunnae of Kangwon Province; and areas surrounding Pyongyang. Brown coal is abundant in the Eunduk (Aoji) region, Saebyul, and Onsung of North Hamgyong Province; and the Kumya (Yungheung) region of South Hamgyong Province.

During the Third Seven-Year Economic Plan period, North Korea pursued expansion plans for various coal cooperatives around the nation, as well as for South Pyongan Province's Anju District Coal Cooperative, which contributes about 30 percent of the total brown coal (bituminous coal) production, with the goal of increasing coal production to 120 million tons. However, coal production actually decreased. North Korea had announced that its coal production in 1989 was 85 million tons; in 1993, it was 107.1 million tons (1.4 times that of

¹⁶ *Ibid.*

1989).¹⁷ However, the actual amount of coal production in 1993 is estimated at 21.1 million tons. Production subsequently decreased further because of the lack of progress in developing new coal mines, the slowdown of excavations, and the outdated equipment. By 2002, total coal production is estimated to have been about 21.9 million tons.¹⁸

In the July 1 Economic Reform made in July 2002, North Korea set a higher wage for coal miners compared to that of workers in other industries. The average increase in the wage across industries was about 18 times. In contrast, the wage for coal miners increased more than 20–25 times. This wage increase seemed to have increased production for a while. Because of continuing inflation and organizational problems in the bronze industry, however, it has not been able to achieve the success anticipated.

Poor coal production and a drop in oil imports caused by the lack of foreign currency are factors that have exacerbated the energy crisis. Because of those circumstances, North Korea is encouraging the development and use of low heat and subbituminous coal for cooking, for heating, and for operating smaller provincial industrial factories.

Geomdeok mine, Gyesang mine, Seongcheon mine, and Hwapoong mine are nonferrous metal mines that produce lead and zinc. Of those, Geomdeok is the largest, with an annual production capacity of 52,000 tons of lead and 124,000 tons of zinc. At Geomdeok, a large-scale dressing plant capable of processing 10 million tons of ore was completed in 1983 and has been in operation ever since. Also, tungsten is produced at Mannyeon mine, Jeonchang mine, and Gyungsoo mine. Gold, silver, and copper are produced at Wonsan mine, Daeyoo mine, Holdong mine, Sangnong mine, and Sungheung mine. However, details about their production are not being reported. There is a concentration of magnesite—the raw material for magnesium—in South Hamgyong Province and Ryanggang Province regions. Conditions for excavation are relatively favorable. Major magnesite mines are Yongyang mine and Daeheung mine in South Hamgyong Province and Dancheon-si and Namgye mine in Baekam-gun. Of those, the amount of magnesite in the Yongyang mine is of an international scale, estimated at 6 billion tons, and the mine has an annual production capacity of 3 million tons.

¹⁷ Report from the general meeting of the Party's central committee regarding the execution of the Third Seven-Year Plan (9 December 1993).

¹⁸ Bank of Korea (1998).

3. Metal Industry

North Korea's metal industry is divided into the black metal industry and the color metal industry.¹⁹ The former refers to the steel and steel manufacturing sectors, which use iron ore as their main raw material and produce pig iron, steel, rolled steel, processed metallic goods, and similar items. The latter refers to nonferrous metal sectors that produce gold, silver, copper, lead, zinc, and aluminum and that manufacture their processed goods.

The conditions of the black metal industry show that its main steel and steel manufacturing plants are as follows: Kim Chaek Iron and Steel Complex (North Hamgyong Chongjin), Hwanghae Iron and Steel Complex (North Hamgyong Songrim), Songjin Steel Complex (North Hamgyong Kimchaek), Chollima Steel Complex (Nampo), Chongjin Steel Manufacturing Plant (North Hamgyong Chongjin), 4.13 Steel Plant, 8 Unit Steel Manufacturing Plant, and Daedong River Steel Plant. Of those, only 4.13 Steel Plant and 8 Unit Steel Manufacturing Plant were constructed by North Korea. The rest are facilities that were built during the Japanese colonial occupation and that have been renovated or expanded. Because of the lack of financial resources, expansion of production facilities has not been feasible since 1995; however, there has been a concentrated effort to increase production efficiency by maintaining and repairing existing steel and steel manufacturing facilities.

North Korea's annual steel production capacity in 2002 is assessed to be 5.41 million tons for pig iron, 5.98 million tons for steel, and 4.04 million tons for rolled steel. Kim Chaek Iron and Steel Complex is North Korea's largest steel plant. Its annual production capacity is 2.16 million tons of pig iron, 2.4 million tons of steel, and 1.47 million tons of rolled steel. Hwanghae Steel Complex's annual production capacity is 1.14 million tons of pig iron manufacturing, 1.44 million tons of steel manufacturing, and 750,000 tons of rolled steel. Songjin Steel Complex's annual production capacity is 480,000 tons of pig iron, 726,000 tons of steel, and 415,000 tons of rolled steel. Chollima Steel Complex possesses an annual production capacity of 764,000 tons of steel and 550,000 tons of rolled steel.²⁰ (For overall steel production, see Table 1-10.)

¹⁹ Encyclopedia Publishing (1996, 531).

²⁰ Ministry of Unification (2003).

Table 1-10. Steel Production Capacity

(unit: 10,000 tons)

	1980	1985	1990	1995	2000	2001
Pig Iron	346.6	507.6	517.0	541.3	541.3	541.3
Steel	398.3	430.0	594.6	598.0	600.0	600.2
Rolled Steel	276.0	339.0	494.0	404.0	404.0	404.0

Source: Ministry of Unification.

The 2003 production trends in the metal industry show that in both the non-ferrous metal and the steel sectors, production is low. North Korea's policy direction in 2003 for the metal manufacturing sector was the implementation of steel and steel manufacturing technology using domestic raw materials and fuel rather than the construction of new plants. Also, the goal in 2003 was to satisfy the demand for steel production needed for "national security and the people's economy." To resolve the labor shortage in the metal industry, North Korea placed large groups of discharged soldiers at the Kim Chaek Steel Complex and other large-scale metal plants and then committed them to technology improvement and massive repair projects at each plant.

There was no conspicuous progress in the metal manufacturing industry in 2003, apart from the construction of a new magnesia production center at the Dancheon Magnesia Plant. The production status of 2003 shows that in the steel manufacturing industry, Chollima Steel Complex met its planned production target (*Korean Central Broadcasting* 1 May 2003); Songjin Steel Complex met its planned target for June, July, and August (*Korean Central Broadcasting* 12 August 2003); and Kim Chaek Iron and Steel Complex had exceeded its planned production target some time in August. In the nonferrous sector, apart from the Dancheon Plant exceeding its quarterly production target (*Rodong Sinmun* 1 June 2003), no other exceptional progress could be presented.

The problem with North Korea's steel industry is the diminutive size of each factory's facilities. Most are based on small facilities built during the Japanese occupation and have undergone only partial renovation and expansion since the Korean War. Thus, they are not able to achieve a uniform and standardized system, and they are technologically very far behind. To address these problem areas, the country pursued installation of an industrial television network system and a remote control system at the Kim Chaek Steel Complex, Hwanghae Steel Complex, and various other major plants during the second round of the Seven-Year Economic Plan period. In addition, massive repair projects were undertaken at the Kim Chaek Steel, Hwanghae Steel, Songjin Steel Manufacturing, and Chollima Steel Complexes during 2002. Despite those efforts, the general technological level was still estimated to be similar to South Korea in the early

1980s.

North Korea has been producing lead, zinc, nickel, and molybdenum. With the construction of the Bukchang Aluminum Factory in 1983, much effort has been made in the production of rare metals such as aluminum, tungsten, niobium, and cerium. Bukchang Aluminum Factory was constructed with equipment brought in from the former Soviet Union and other Western nations. Its annual production capacity is 20,000 tons, and it receives its supply of alumina (40,000 tons per year)—the raw material for aluminum—from Busan Alumina Factory in Suncheon. In February 1990, a nickel mine began its operation in Hannam Jungpyong-gun. Nickel is the main raw material for stainless steel, heat-resistant steel, and various other types of special alloy steel. The nickel mine in Hannam is known to have an annual production capacity of processing around 200,000 tons of nickel ore (Ni 0.5 percent) to create 30,000 tons of concentrated nickel (Ni 3 percent).

In the meantime, with the purpose of drilling for and exporting rare metals excavated in North Korea, Hamhung Chemical Cooperative Enterprise (which produces 10,000 tons of yttrium and lead per year)—founded jointly by Yongaksan Central Trading Company and the General Association of Korean Residents in Japan (Jochongryun)—began its operations in April 1991. The Chongjin Metal Cooperative Enterprise, a North Korean–Chinese cooperative plant that produces and exports metal processed goods and major commodities, was founded in April 1998. However, as in the steel and steel manufacturing sectors, the smelting technology and production facilities of the nonmetal manufacturing industry still fall significantly short of international standards. Consequently, the modernization of industrial facilities has become the obvious task for the nonmetal manufacturing industry.

4. Chemical Manufacturing Industry

Because of the recent energy and energy distribution crisis, North Korea's policy has prioritized the feeding, clothing, and housing of its citizens. The chemical manufacturing industry is closely related to the possible resolution of the feeding, clothing, and housing issue. North Korea is concentrating its efforts on the construction of factories to produce chemical fertilizer and pesticides so it can increase food production and construct vinyl factories that will increase the production of chemical fibers. However, the chemical manufacturing industry has promoted a development strategy of creating dependency on coal rather than oil, its facilities are not systematized, and it operates a production system independent from the production center of the raw material. Also, with the stagnation in supporting industries such as the light industry and the automobile

industry, progress in the material industries, such as the chemical manufacturing industries, is at a standstill. North Korea's chemical manufacturing industry is a major industry that has been unsuccessful in experiencing a dramatic revitalization from the energy and energy distribution crisis.

North Korea's major chemical fertilizer plants include the Hungnam fertilizer company, Soonchun lime nitrogen company, Sariwon fertilizer company, and Namheung youth fertilizer company. The Hungnam fertilizer company is North Korea's largest plant producing chemical fertilizer. It can annually produce 1.33 million tons, and it provides 37 percent of the North's total production. Unfortunately, it has been unable to operate normally because of major breakdowns and other problems.

The production levels of North Korea's chemical fertilizer industry constantly decreased in the 1990s because of the depreciation of facilities and insufficient energy and raw materials. By 2002, production had fallen to 503,000 tons. Most notably, a serious imbalance in production capability exists, because the production mechanisms of chemical fertilizers are based on short-term installations, plus the production of kali fertilizers is extremely lacking.

In 2003, there were no notable production activities, with the exception of the modernization of the artificial soda production line at 2.8 Vinyl United plant and surplus production at the Hasung tire production plant.

Table 1-11. Production Volume of Chemical Fertilizers

(units: 10,000 tons)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
160.9	131.8	120.9	95.6	77.0	70.0	77.0	53.9	54.6	50.3

Source: Bank of Korea.

In the petrochemical industry sector, the Bonghwa chemical plant (Pihyun district) was built with Chinese aid, and the Sungrhee chemical plant (Raseon-si) was built with aid from the ex-Soviet Union. Each plant has a refining capacity of 1.5 million and 2 million tons, respectively, and produces gasoline, light oil, jet fuel, diesel oil, lubricating oil, and kerosene oil. The Namhung United Youth Company (Pyongnam, Anju) is a petrochemical plant that was constructed to resemble facilities in the West. This plant produces chemical materials such as polyethylene; its production is supported by the Bonghwa Chemical Plant.

The level of North Korea's crude oil importation has increased in recent years after showing a decreasing trend since 1988. Notably, there has been a drastic decrease in the shipments of crude oil from Russia after the transition to a trade system that is based on hard currency. During the same period, crude oil shipments from China decreased visibly; by 2002, the volume remained at a

mere 600,000 tons.

Table 1-12. Crude Oil Imports

(unit: 10,000 tons)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
136	91	110	94	51	50	32	39	58	60

Source: Bank of Korea.

5. Electricity

North Korea's electricity generation industry can largely be divided into hydroelectric power and coal electric power that is based on anthracite. North Korea has abundant water resources and a largely mountainous landscape. Because of this natural advantage, the construction of hydroelectric power plants had been promoted in areas such as the Supung, Jangjin River, and the Bujun River since the Japanese colonial era. As a result, North Korea's electric power production structure depended mostly on hydroelectric power until the 1960s. But constant changes in the level of rainfall led to problems with fluctuating power generation. Supplying electricity to distant areas was another difficulty with this system. So in the 1970s, emphasis was placed on constructing coal electric plants that would use the abundant anthracite resources.

Following this trend, the ratio of hydroelectric to thermal power was 5:5 in the 1980s. The construction of power plants progressed actively in the 1980s, but in the 1990s, the lack of necessary investment resources caused construction to drastically slow down.

North Korea's hydroelectric power plants include the Supung power plant with a power capacity of 700,000 kW. Others include Woonbong, Sudoosu, Huchun River, Jangjin River, Kangkyechungnyun, Bujun River, Taepyungman, Wuiwon, and Taechun power plants. Of those power plants, the Supung, Woonbong, Taepyungman, and Wuiwon power plants are jointly managed and used with China.

In the mid-1990s, North Korea promoted the construction of mid- to small-sized power plants with a power capacity of less than 10,000 kW for their short construction times and low costs.²¹ Those plants were constructed to satisfy the

²¹ The construction of mid- to small-sized power plants was promoted according to the decisions made in the nineteenth meeting of the fifth central committee of the party (December 1979). However, policy interests in those power plants decreased because of their low efficiency and constant malfunctions. However, there has been recent emphasis on the small- to mid-sized power plants, such as the legal codification of "principles of construction of all nations" when the "Electric Power Laws" (January 1996) and "Rules related to the execution of the Electric Power Laws" (January 1997) are selected.

electricity demand for small-scale production plants and homes outside the capital. In 2002, the construction of 6,740 power plants was completed. However, those small- to mid-sized power plants have severely low power capacities and are sensitive to seasonal changes. Hence, the North concentrated more on the construction of large-scale hydroelectric power plants with a power capacity of 10,000 kW or more while constructing larger-capacity small- to mid-sized power plants using the step construction method.²²

Thermal power plants in North Korea include the Bukchang thermal power plant with a power capacity of 1.6 million kW. Other thermal power plants include the Pyongyang, Sonbong, Chungchun River, Chongjin, Sunchon, and East Pyongyang plants. The Pyongyang, Sonbong, Bukchang, and Chongjin thermal power plants were created with Soviet aid. Construction of the Dongpyung thermal power plant was initiated with Soviet aid but was never completed. Currently, it is partially operational. Since the mid-1990s, North Korea has concentrated more on the maintenance and repair of existing thermal power facilities than on the construction of new ones.

It is estimated that North Korea's total electric power capacity is 7.77 million kW and that the ratio of hydroelectric to thermal electric is 6:4 (at the end of 2002). Other facts include establishing the Center for Developing and Utilizing Renewable Energy in September 1992. This establishment has been in charge of developing renewable energy sources such as wind energy, tidal energy, and solar energy. Accomplishments include the installation of a 90 kW wind energy power plant and the construction of a tidal energy power plant with a capacity of several thousand kW in Byeokseong county of South Hwanghae district. However, the process is still in the experimental stage. (See Table 1-13 for electrical figures.)

North Korea's electric power sector has had problems in productions because of a serious energy crisis in 2003. The Pyongyang thermal electric power plant (capacity of 500,000 kW) is operating only six of its fourteen boilers, while nine of the fifteen boilers in the Bukchang thermal power plant are being repaired, leaving only six boilers operational. The East Pyongyang thermal electric plant is in the process of a total repair and cannot generate any electricity. However, North Korean media reports that the Bukchang, Pyongyang, Dongpyunya, Chungchun River, and Sunchon thermal power plants have reached their 2003

²² After Chairman Kim Jong-il ordered the construction of large-scale hydroelectric power plants during his visit to the Taechon power plant on 18 January 1999, construction projects of large-scale hydroelectric plants such as the Kumya River, Yesung River, Anbyunchungnyun, and Orangchon plants were promoted.

Table 1-13. Electrical Power Capacity and Actual Amount Generated

Year	Power Capacity (10,000 kW)			Actual Generated Amount (100 million kWh)		
	Total	Hydro	Thermal	Total	Hydro	Thermal
1985	596.0	336.2	260.0	252.8	124.4	128.4
1990	714.2	429.2	285.0	277.4	156.1	121.3
1991	714.2	429.2	285.0	263.0	150.3	112.7
1992	714.2	429.2	285.0	247.0	141.9	105.1
1993	714.2	429.2	285.0	221.3	132.9	88.4
1994	723.7	433.7	290.0	231.3	138.4	92.9
1995	723.7	433.7	290.0	230.0	142.0	88.0
1996	738.7	443.7	295.0	213.0	124.0	88.0
1997	738.7	443.7	295.0	193.0	107.0	86.0
1998	738.7	443.7	295.0	170.0	102.0	68.0
1999	738.7	443.7	295.0	185.7	102.7	83.0
2000	755.2	459.2	296.0	193.6	101.6	92.0
2001	775.2	479.2	296.0	201.5	105.5	96.0
2002	777.0	481.0	296.0	190.4	106.2	84.2

Source: Ministry of Unification and Bank of Korea.

first quarter goal. Nonetheless, after April 2003, production showed stagnation; the only power plant that successfully executed its production plan was the Chongjin thermal power plant.

In terms of hydroelectricity, thanks to the abundant rainfall in the summer of 2003, the amount of power generated in August 2003 is shown to have increased by 35 percent over that of the same period of the previous year (6 September 2003, *Korean Central Broadcasting*). According to the North Korean media, Supung power plant, as well as power plants in Jangja River, Taechun, Wuiwon, and Nam River, reached their February 2003 goals. The Daedong River and Jangja River plants reached their first quarter goals. In addition, it has been reported that the 17 March electric plant exceeded its 2003 plan each month. In the meantime, it has been reported that small- to mid-sized power plants in Jagangdo are operating at full capacity. Their daily energy production is known to be about 33,000 kW.

The problems facing North Korea's electric power sector are as follows. For hydroelectric power plants, the problems are a decrease in water resources caused by deforestation, low rates of operation because of outdated equipment, and extreme seasonal fluctuations in electric energy production. For thermal power plants, the production and distribution of their main raw material-coal-has reached its limit yet enables only a low rate of operation. Moreover, an inefficient supply

system results in a high rate of short-circuiting. Because the electric pressure is not consistent throughout, there is a decline in the amount and quality of the energy supply.

During 2003, North Korea pursued the modernization of its electric energy supply system by signing an agreement to construct a high-speed supply system with a multinational corporation like ABB, among other things.²³ However, North Korea's electric energy situation is not likely to improve soon, because there are structural problems with electric power generation and the system of supply and distribution.

C. Outlook for the North Korean Economy

Despite the extreme deterioration in foreign relations over the nuclear weapons issue, the North Korean economy has recorded a positive growth rate in trade, albeit minimal. This growth can be attributed to China's aid, to increases in North Korea-South Korea economic cooperation, and to increases in demand arising from internal economic reform. For the successful completion of the July 1 Economic Reform, North Korea has been focusing its efforts on increasing the general internal supply capacity. North Korea has focused on aiding and investing in economic sectors of high performance. It has also exerted its efforts to increase the production of the people's consumer goods by modernizing the light industry. In addition, agricultural production has increased through breeding revolutions, increases in potato farming, and continual support for second-crop farming and the land reorganization project. In the meantime, actual profit and the introduction of advanced technology are especially emphasized in internal economic management and foreign economic relations.

In individual economic sectors, key industries are still stagnating because of a lack of improvement in foreign relations. However, a small amount of growth has been recorded, and it is thought that this growth is being caused by labor mobilization and expanding of private business activities. With the official recognition of the private distribution sector, stores have multiplied, and the service and transit industries have become systematized. In particular, the construction industry's use of surplus labor and profits from people's life bonds has made it the most active production sector. Also, the agricultural sector has managed to increase crop production thanks to favorable weather conditions and to South Korea's fertilizer assistance. However, the key industries are still suffering from

²³ *Korean Central Broadcasting* (19 May 2003).

an energy and raw materials crisis caused by the suspension in crude oil supply and the lack of improvement in foreign relations. Thus, the key industries' rates of production have fallen dramatically.

The proposed main tasks for the North Korean economy are an absolute increase in the production amount for commodities for the domestic market and the maintenance of the ideal exchange rate for the North Korean won. It seems that in 2004, as in 2003, North Korea will have as its main goal normalizing the production at industrial plants in each sector and strengthening the capacity of the commercial distribution sector. The specific management strategy for this goal is the expansion of the comprehensive economy, the gradual increase of private ownership, and the changes in financial and exchange rate policies. This limited strategy is intended to be implemented as it is needed. In the meantime, efforts will be concentrated on furthering economic cooperation projects with South Korea, which have played a central role in the North Korean economy's positive growth. There will be efforts at trade expansion; enthusiastic promotion of the construction of the Kaesong Industrial Complex; and invigoration of South Korean tours to famous tourist destinations such as Pyongyang, Kaesong, Mt. Kumgang, Mt. Myohyang, and Mt. Paekdu. Additional measures to increase foreign investment will be adopted, depending on the direction of the six-party talks.

Since 2003, North Korea has been concentrating national efforts in the energy, agriculture, science and technology, and residential construction sectors. In the energy sector, a three-year plan (2003–2005) to resolve the fuel and power crisis is being devised and pursued.²⁴ North Korea considers the energy crisis to be the main cause of its economy's stagnation. Thus, it is pursuing plans to increase the energy supply through improving power plant technology, increasing coal production, and supplying related machinery and equipment.

In the agriculture sector, the use of computers in farmin—"information agriculture"—is being pursued as a national project to produce 8 million tons of food by 2007.²⁵ As the first step in this plan for increased food production, the so-called information agriculture was introduced to Anak-gun in South Hwanghae Province and three other guns in 2003 in an attempt to change positions and make farming technological. Also, in the science and technology sector, the Five-Year Science and Technology Improvement Plan has been pursued since 2003.²⁶

²⁴ Interview with Choi Hong-gyu, Director of State Planning Committee, *Homeland* (April 2003 issue).

²⁵ *Choson Sinbo* (22 April 2004).

In the meantime in the residential construction sector, the Three-year Plan for Residential Construction in Pyongyang was devised to promote the construction of 22,800 residences in Pyongyang city during a three-year period (2002–2004).²⁷

It is believed that in the midst of pursuing plans in each sector, North Korea is preparing a foundation for a mid- to long-range economic plan.²⁷ However, considering North Korea's current economic conditions and foreign relations situation, it would be difficult to attain not only the goal of a mid- to long-range economic plan but also the goals of sector-specific plans. The reason is that the most fundamental obstacle to the growth and development of the North Korea economy is the problem of development funding. Development funding must basically be supplied by foreign capital. However, the United States, which holds the key to supplying foreign capital to North Korea, is unlikely to change its policy toward North Korea.

Henceforth, it seems as though North Korea will pursue sector-specific economic plans, taking into consideration the conditions of foreign relations and focusing on resolving urgent economic problems such as the energy and food crises and the normalization of the economy. Also, it is projected that to demonstrate the actual results of the July 1 Economic Reform, the autonomy of commercial distribution and corporate management will be regularly increased. Then the scope of self-responsibility in the economic activities of provincial governments, enterprises, and citizens will be expanded.

Reference

- Bank of Korea. *The Result of North Korean GDP Estimation*. Various issues. Seoul: Bank of Korea.
- _____. 2002. "The Meaning of North Korea's Recent Economic Reform and Prospects." Seoul: Bank of Korea. (Press Release, 23 August 2002).
- Encyclopedia Publishing. 1996. *North Korea Encyclopedia*, vol. 21. Pyongyang:

²⁶ In the "Commemorative Report for the Fiftieth Anniversary of the Founding of the Center for Science," the science director, Lee Gwang-ho, urged "concentration on scientific research projects in order to execute the Five-Year Science and Technology Plan, which begins in 2003."

²⁷ Interview with Kang Tae-heup, Assistant Head of the Ministry of National Construction, *Homeland* (November 2002 issue).

²⁸ In an interview with *Asai Newspaper* (25 October 2002), Choi Hong-gyu, Director of the State Planning Committee, stated that "contrary to past drafting methods, the foundation of the economic plan that is being devised this time places importance on actual profit."

- Encyclopedia Publishing.
- Korean Central News Agency. Korean Central Yearbook [*Choson Joongang Nyungam*], Pyongyang: Korean Central News Agency, 1968, 1970, 1974, 1976.
- KOTRA (Korea Trade-Investment Promotion Agency). 2001. *North Korea's Foreign Trade 1990-2000*. Seoul: KOTRA.
- _____. *North Korea's Foreign Trade (Annual Version)*. Various issues. Seoul: KOTRA.
- Minister of Statistics. 1997. *The Economic Comparison of South and North Korea*. Seoul: The Korean Minister of Statistics.
- Ministry of Unification. 2003. *Abstracts of the North Korean Economy*. Seoul: Ministry of Unification.
- _____. *Monthly North Korean Trend*. Various issues. Seoul: Ministry of Unification.
- Social Sciences Publishing. 1995. *Dictionary of Finance and Banking*. Pyongyang: Social Science Press Publishing.
- Asai Newspaper*. 25 October 2002.
- Choson Sinbo*. 22 April 2004.
- Homeland (Choguk)*. April 2003, November 2002.
- Korean Central Broadcasting*. 6 September 2003.
- Korean Central Broadcasting*. 19 May 2003.
- Rodong Sinmun*. Various issues.
- Yonhap News*. Various issues.

Chapter 2

National Financial Revenue and Expenditure

A. Changes in North Korea's Budget

1. Changes in the Scale and Content of Expenditure

The North Korean government approved the settlement of the 2002 budget execution and the budget for 2003 through the tenth round of the Sixth Supreme People's Assembly.¹ The main goals for the 2002 budget execution included achieving 100.5 percent of the planned revenue level while 99.8 percent of the planned expenditure was executed, hence leaving a 0.7 percent surplus. The specifics of the budget execution are as follows: people's economic expenditure was 22.7 percent while military expenditure was 14.9 percent. The people's economic expenditure recorded a 20 percent decrease compared to the previous year when 42.3 percent of the total expenditure was allocated to the people's economic expenditure. The people's economic expenditure was primarily invested in the so-called "Main Front for Economic Construction"—sectors such as electricity, coal, metal, railroads, and transportation. Hence, it is reported that

¹ Every March the North Korean government holds the Supreme People's Assembly (similar to a parliamentary meeting) in order to settle the accounts of the previous year while authorizing the budget for the current year. Authorizing the budget for the current year in March is not problematic as a result of the special characteristics of a planned economy. North Korea's national budget is preplanned by the Ministry of Finance of the political committee in cooperation with the Council of National Planning and Council, to decide national price levels. The Supreme People's Assembly only symbolically authorizes the budget planning and customarily does not alter the national budget. For more on the budget decision process, refer to Deok-ryong Yoon (2003).

the increased investment for industrial infrastructure and major sectors is helpful for strengthening the foundation of economic recovery.

North Korea's main elements of financial expenditure usually include the people's economic expenditure, social and cultural facilities expenditure, military expenditure, and maintenance expenditure.² The exact figures of these expenditures are not announced, only the proportion of each expenditure category relative to the total expenditure. Usually, the percentage increase or decrease from the previous year is the only aspect that is consistently announced. Table 2-1 shows that North Korea announced only the relative proportion of the people's economic expenditure and military expenditure in the 2002 budget settlement and did not reveal the exact amount of the maintenance expenditure and the social and cultural facilities expenditure.

The background for the 20 percent decrease in funds for economic construction, which is the most urgent issue for the country, is assumed to be simple lack of income or the occurrence of other urgent issues that required budget allocation. However, as North Korea did not have any urgent issues that required budget allocation in 2002, it is more likely that the reason for the decrease is simple lack of income.

North Korea's July 1 Economic Reform seems to have placed increased strains on the budget. The act increased the demand for government expenditure because it included provisions to raise the government purchasing price of products and raise the wages of laborers. Additional elements that led to the decrease in the budget are the increase in reserved profit levels for firms. The July 1 Economic Reform was meant to increase incentives for firms.

As a result, it is highly likely the various changes that were made after the economic reforms led to the decrease in North Korea's budget level. Hence, the conclusion is that this is the reason behind North Korea's inability to provide adequate funding for the people's economic expenditure. This kind of conclusion is a contradiction to the government's announcement of a 0.7 percent budget surplus. Thus, it is assessed that North Korea's announcement of budget surplus is different from the truth.

Another reason the people's economic expenditure decreased significantly is that the social and cultural facilities expenditure, which was traditionally included in the people's economic expenditure, was included in the people's policy expenditure from 2002.

² Korean government organizations such as the Ministry of Unification and the Bank of Korea calculate the estimation values for North Korea's expenditure statistics on the basis of the data announced by the North Korean government.

Table 2-1. Relative Proportion of Each Category in Budget Execution, 2002

	People's Economic Expenditure	People's Policy Expenditure	Military Expenditure	Maintenance Expenditure	Total
2002	22.7%	—	14.9%	—	100.0%
2001	42.3%	38.1%	14.4%	5.2%	100.0%

2. The Budget Scale and Changes in the Content

North Korea's 2003 budget established a clear basis for the policy of budgetary expansion. North Korea showed a regular budgetary increase of 3–5 percent and has not shown any drastic increase since the 1990s. However, in 2003, the North announced a 13.6 percent increase from the previous year. This increase was planned to be supported by the following activities: profits from national firms, 5 percent; profits from cooperative organizations, 3.3 percent; income from social insurance, 6.7 percent; and income from land usage fees, 3.7 percent.

However, whether this plan to increase national income will succeed is questionable. There are two ways to carry out this plan to increase government income through profits from companies, profits from cooperative organizations, social insurance fees, and land usage fees. The first option would be to increase the usage fee for organizations and firms. However, this fee will result in decreased profits for the firms and cannot be a viable plan, especially in a strained condition where fewer than half of the production plants and companies are in operation. The second solution might be to increase the operation rates of firms and stores. However, this plan is also not very viable because most firms are not functioning. If those firms are to be normalized, there must be refreshed supply while demand must increase, in terms of purchasing power, so they can generate profits. Although the July 1 Economic Reform increased prices to a level where profit generation is possible for firms, expansion in the supply mechanism re-

Table 2-2. Changes in North Korea's Budget in the 2000s

Year	2000			2001			2002			2003	
	Budget		Settlement	Budget		Settlement	Budget		Settlement	Budget	
	Amount	Amount	Percentage Increase/Decrease	Amount	Amount	Percentage Increase/Decrease	Amount	Amount	Percentage Increase/Decrease	Amount	Percentage Increase/Decrease
Income	204.1	209.0	5.6	215.7	216.4	3.4	221.7	222.8	3.0	253.1	13.6
Expenditure	204.1	209.6	4.6	215.7	216.8	3.5	221.7	221.3	2.1	253.1	14.4

Notes : 1. The "amount" is calculated using the price index of 2000.

2. The "Percentage Increase/Decrease" is based on the previous year.

Source: Bank of Korea.

quires initial investment. Hence, only limited spheres and aspects of the economy meet the necessary requirements. Without active investment from the government, this plan cannot succeed. (See Table 2-2.)

Even with small-scale investment on the company level, the production level of consumer products would increase, hence increasing government revenue. However, even such partial opportunities can be possible only when the nationalized companies can meet adequate profit levels. Hence, direct access channels to government-owned stores and private markets such as the former “farmers’ market” must be established.

It is apparent that the North Korean government has recognized such problems. North Korea has transformed the former “farmers’ market” into “consumers’ market” in which industrial goods can also be traded.³ Furthermore, it has allowed normal production plants and firms to participate in the market to trade goods. As a result, it created the basis for improving the profitability of nationally owned companies. Such acts of reform in the market structure are geared toward (a) giving the physical stimulus needed for promoting production activity, (b) solving the shortage of basic goods, and (c) normalizing the amount of government revenue.

For increasing investment, North Korea allowed the acquisition of necessary capital from the market. However, without proper financial markets, increasing investment cannot be possible in a short period of time. Hence, North Korea issued the People’s Life Government Bond to use the people’s excess revenue. In fact, the sale of People’s Life Government Bonds was initiated in May and continued until November, exceeding the August deadline for sales. It was announced that the People’s Life Government Bond contributed positively to government revenue.

While the North Korean government implemented various measures to increase government revenue, time is needed to reap the benefits from those measures. The various measures will not contribute significantly to increasing government revenue for 2003, because the effects of those measures are estimated to materialize with time. Hence, the expanded budget that North Korea planned will ultimately be promoted through the issuance of government bonds. If this measure is unsuccessful in raising revenues, a budget deficit is inevitable.

In North Korea’s 2003 budget plans, it was finalized that expenditure would increase 14.4 percent from the previous year. Of the budget, 15.4 percent is allocated for national defense, and the other categories are announced only in

³ Further analysis of North Korea’s issuance of public bonds will be discussed in detail in the following chapter.

terms of the percentage increase or decrease from the previous year. The announced increases are as follows: 12.8 percent in electric supplies, 21.4 percent in farming, 12.4 percent in light industry, 15.7 percent in development of science and technology, and 15.3 percent in education. Although the main reason there is a general increase in the budget allocation for the economic sector is the urgency of economic recovery, another reason is the July 1 Reform. Because of the enactment of that reform measure, the government significantly decreased the amount of free supplies. As a result, part of the socio-cultural funds that were previously allocated for free supplies could now be re-allocated to the economic sector.

It would not be wrong to say that each sector for which North Korea increased budget allocations is one that has issues that urgently require attention. For example, the problem of the supply of electricity needed to be solved urgently following the U.S. decision to halt shipments of crude oil to North Korea. In particular, it was announced that for the coal sector, 1.3 times the original budget would be allocated. Furthermore, one can see that food shortage is persistent considering the fact that there was a 21 percent increase in budget allocation for the farming sector. Along the same lines, the increased budget allocation for the light industry sector suggests that consumer goods are still in short supply. Finally, the large-scale increase in the budget allocation for the science and technology sector suggests that the North is pursuing an economic development plan that places emphasis on science and technology. (See Table 2-3.)

Table 2-3. Budget Execution Plans According to Category

	People's Economic Expenditure	People's Policy Expenditure	Military Expenditure	Management Expenditure	Total
Proportion(%)			15.4		100
Rate of Increase (from previous year)	Electricity: 12.8% Coal Industry: Over 30% Agriculture: 21.3% Light Industry: 12.4% Science and Technology 15.7% Land Development: 18.5%	Education: 15.3% Culture and Art: 14.4% Health: 13.1% Sports: 6.6%			

The only expenditure category for which North Korea revealed the exact proportion of the 2003 budget is the military expenditure. The government traditionally fixes the proportion of the military expenditure at 14.5 percent of the total budget. However, in 2002, there was a reported increase of 0.5 percent in the expenditure settlement and another increase of 0.5 percent in 2003. The government publicly expressed its intent to develop the national defense indus-

try and strengthen the nation's defensive capability.

It is believed that North Korea's explanation for the 1 percent increased budget allocation—the production guarantee and strengthening of military power through guaranteeing raw materials for the national defense industry—shows that these measures are due to the tension with the United States over issues related to nuclear development. Furthermore, an increase in the military expenditure can also be regarded as a plan to increase the government's control over the nation by guaranteeing a system of governance that prioritizes the military over everything. (See Table 2-4.)

Table 2-4. Changes in North Korea's Military Expenditure (percentage of the total budget)

	1999	2000	2001	2002	2003
From the Expected Budget	14.5%	14.5%	14.5%	14.4%	15.4%
From the Execution of the Budget	14.5%	14.3%	14.4%	14.9%	

Another peculiarity of the 2003 budget announcement is that the actual size of the budget remains unannounced. In previous years, it has been standard for North Korea to reveal the total amount of the budget and the specific proportion of expenditure for each category. However, even in the 2002 expenditure, the North only partially revealed the rate of change; in the 2003 budget, the North revealed the rate of change only in some specific categories.

The reason the North does not reveal the actual amount of the total budget can be explained in two ways. First, North Korea has experienced enormous hikes in real inflation and wage levels since the July 1 Economic Reform. Also, when economic transactions are made through monetary means, liquidity becomes the most important measuring standard for economic activities. In reaction to those changes, inflation rates in all sectors of the economy are in flux. However, the regime lacks the skills to manage the economy through monetary policies. Hence, it seems impossible that the North can formulate a budget plan that is measured by monetary means. It is highly probable that the statistics announced by the North are based on the real production rate, because socialist nations traditionally formulate real production plans (based solely on actual physical production).

Second, possibly the budget plans of the previous year could not be executed as planned. As a consequence, the state cannot reveal the actual statistics without exposing this mishap. Realistically, it is assumed that the economic management reform measure has significantly decreased the North's government revenue. North Korea's claim of a budget surplus in 2002 has stirred many doubts as to the credibility of this claim. Therefore, this reticence could reflect the

government's desire to disguise its internal situation, considering its own prestige and strategic interest. Of course, the first reason and second reason could both be valid in explaining the situation.

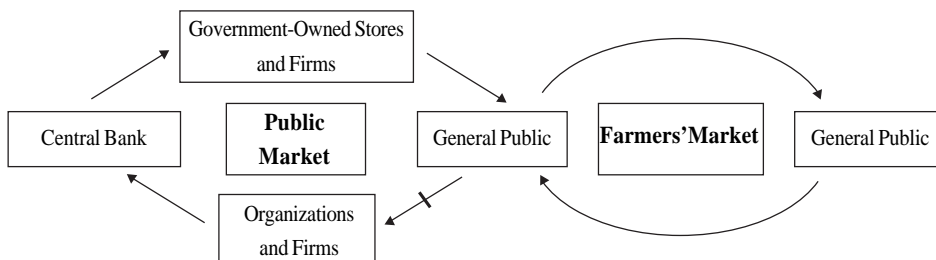
B. Changes in the Financial Situation

It is believed that North Korea's financial situation has worsened. The money circulation channel is not functional because the operational accomplishments of North Korea's organizations and firms have not improved significantly. Furthermore, a plan is urgently needed to solve the problem of stagnation of government investment owing to increased expenditure and decreased income caused by the economic reform acts. The actual changes in the economy can be summarized as follows.

First is the malfunctioning currency circulation system. The process of currency circulation is described in Figure 2-1. Normally, the currency issued by the central bank is circulated as follows: Central Bank → Organizations and Firms → General Public → State-owned Stores and Firms → Central Bank. And through the central bank, the currency is ultimately channeled back to the government. The currency retrieved is then redistributed to the people according to the government's budget plan.

However, North Korea's crippled production ability has, in turn, paralyzed the currency retrieval function of government-managed stores and firms. The supplied currency cannot be retrieved because of the current disintegration in the production circulation system. Furthermore, the supplied liquidity has begun to accumulate in the black markets and the farmers' markets, instead of the publicly recognized market. Those factors have generated severe internal inflationary pressure. Basically, this internal inflationary pressure has consistently increased as the public market has lost its ability to absorb the currency because of its lack in supply.

Figure 2-1. Process of Civil Accumulation of North Korean Currency



Second is the increased expenditure and decreased income following the July 1 Economic Reform of 2002. North Korea's economic reforms created the burden of increased expenditures owing to the rise in prices of consumer goods. The North Korean government satisfied most of the government's demand for goods, either without cost or through transactions made for the sake of formality. However, since the economic reforms, all economic transactions are made with currency. All economic activities by the government are transformed to function through monetary means. Therefore, those changes led to increased expenditures for the North Korean government. Furthermore, the rise in wage levels also demanded increased expenditure. All of the various elements are reasons behind the state's increased expenditures. Decrease in imports is also expected. To rejuvenate enthusiasm among workers, all the organizations and firms were allowed to retain significantly higher levels of profits and to provide incentives significantly higher than the monthly salary. Consequently, it is assumed that the profits from state-owned companies, which normally contribute more than half of the total government revenue, will be significantly reduced.⁴ Although the possibility is increased that state-owned companies would generate profits, a general increase in profits through increased production will take a significant amount of time. Hence, a decrease in government revenue is inevitable in this situation.

Third is the stagnation of investment owing to the insufficient budget caused by the malfunction within North Korea's currency retrieval system. Stagnation has hindered investment plans for organizations and firms while also preventing investment in economic construction. If the economic management reform act—the first official internal reform promoted by North Korea—is to increase government revenue and revitalize the economy in the long term, it is necessary to find a solution to the short-term problems caused by insufficient funds. Unless investment funds or an income source is found for the purpose of supplementing the short-term shortage of funds, investments will decrease and production capability will shrink further. The economic situation will worsen rather than improve. If that occurs, it is highly possible that the economic management reform measures will fail, as well. Therefore, North Korea has no other alternative but to solve the problem of insufficient investment funds by using every possible source of funds that is available.

⁴ In 2002, at the fifth round of the tenth People's Supreme Assembly, 77.6 percent of the total government revenue consisted of profits from nationalized firms.

C. Issuance of the People's Life Government Bond

1. Background to the Issuance of Government Bonds

To satisfy the drastic increase in the budget's need for funds, North Korea proposed a plan to issue government bonds and, in fact, sold them from May to November of 2003. Plans to issue government bonds were announced in March 2003 in the tenth round of the Sixth People's Supreme Assembly. Finance Minister Mun Il-bong clearly stated that the government bonds would be issued for the purpose of generating internal funds. According to his report, North Korea would issue government bonds "in order to efficiently mobilize and utilize excess liquid funds." The 30 March 2003 issue of *Rodong Sinmun* also stated that "Government bonds are issued for the purpose of generating the necessary funds for modernizing the people's economy and stimulating production according to the demands of the era of information-based industries." This report clearly states that the government bonds were issued to acquire the necessary investment funds for the modernization of the people's economy.⁵

The North Korean government has for the first time admitted that it is under budgetary pressure by announcing this issuance of government bonds. At the same time, the announcement is an indication that the people possess excess funds. This indication is notable in the sense that it reflects the collapse of the centralized economic system and the relative expansion of the private economic sector. It is also an indication that the currency retrieval and accumulation function has been paralyzed from the dysfunction of the nation's financial system. This problem also means that a significant amount of currency has been expelled to the private sector. By revealing the urgent need to mobilize the funds acquired by the private sector for the first time, the North Korean government has indirectly shown that it is under pressure from insufficient funds.

Apparently in North Korea, government bonds are regarded as a form of savings. And if there is an accumulation of savings, it is stipulated that the need for government bonds will disappear.⁶ From a socialist perspective, government

⁵ Among the commentaries contained in the *Rodong Sinmun* issued on 30 March 2003 is the following statement: "The populist characteristic of the government bonds issued by our country can be expressed by its purpose of guaranteeing the stability of our currency by controlling the amount of currency circulation so that the people will not feel discomfort in their lives and all equally live well." This reveals that the issuance of government bonds is designed not only to be used as a conduit for supplying funds but also to stabilize the value of the currency.

⁶ "Government bonds in a socialist country are inherently a conduit to mobilize the funds accumulated by the people in order to execute national policies to enhance the lives of the people and develop the people's economy. Hence, it can be characterized as a 'saving.' With the development of various

bonds are a form of social saving; if the intersocial saving mechanism is functioning properly, government bonds are useless. Considering North Korea's definition of a government bond, the issuance of government bonds indicates two things. First, the government must mobilize the accumulated wealth of the people. Second, the saving function is not performing properly. Those facts prove that the purpose for North Korea's issuance of government bonds is the acquisition of government income.⁷

An additional purpose for the issuance of government bonds is to curb inflation. North Korea has traditionally managed a supply-centered economy (as have other socialist nations), controlling the supply side in order to regulate consumption, hence controlling overall supply and demand. As a result, purchasing power consistently surpassed the supply of products and led to the accumulation of purchasing power. Such excess accumulated purchasing power has resulted in a consistent increase in inflationary pressure.

The disruption generated by the accumulation of purchasing power was temporarily reduced by the July 1 Economic Reform. However, the assumption is that production levels could not match the increased currency supply, because of the increase in government purchasing prices, wage levels, and bonuses, hence creating inflationary pressure.⁸

2. Characteristics and Conditions of Issuance of the People's Life Bond

North Korea revealed that it would issue the People's Life Bond for a limited span of time and politically reward those who contributed to the national income. It was also announced that people who drew a lucky number would be reimbursed first and would be given prize money. Regarding these standards, the People's Life Bond shows no difference in characteristics from other socialist government bonds. The only difference is its limited sales period, manifesting

convenient forms to organize the people's savings, government bond loses its meaning as a form of saving" Social Science Publication (1985, 168).

⁷ Yang Chang-yoon, North Korea's vice director of the ministry of finance, revealed in the 2004 January issue of *Wolganjogook* (Fatherland Monthly) that "As the production plants and companies cannot be operated in the normal level ... national income cannot catch up with the increased government expenditure level." Furthermore he explained, "in order to satisfy the demand for funds through the power of the people, we have issued the People's Life Government Bond" (*Choson Sinbo*, 19 December 2003).

⁸ In an interview included in the 1 April 2003 issue of the *Choson Sinbo*, Choi Hong-gyu, head of the State Planning Committee, admitted the existence of inflationary pressure by stating that the estrangement between national income and expenditure has decreased but has not disappeared since the July 1 Economic Reform.

the government's expectation that the problem of insufficient funds would be solved in a short span of time. (See Table 2-5.)

Table 2-5. Specific Content of the Issuance of the People's Life Bond

- Name of Government Bond: People's Life Government Bond
- Period of Issuance: 1 May 2003–end of November 2003
- Basis for issuance: "Statute for the issuance of the People's Life Government Bond" (passed in the tenth round of the Sixth Supreme People's Assembly)
- Face value(s): Three types—500 won; 1,000 won; 5,000 won
- Maturity: 10 years: expires in April 2013
- Profitability: Prize money will be provided only to those who draw the lucky numbers. Draws will be performed every six months in the first two years. After that, draws will be performed once every year, and the selected people will win the prize money and receive the principal amount (amount of money used to buy the bond). There will be a total of eleven draws until the tenth year when it expires.
- Amortization of the government bond: Amortization will commence from December 2008 and all of the principal amount will be returned by 2013, according to the budget situation. People who do not draw lucky numbers will get only the principal amount.
- Organization that will sell the government bond: The Council for the People's Life Bond will be established at the central, district, city, and county levels. A suborganization for the council shall be established in all organizations, firms, subdistricts, and district offices.
- Methods of promotion: "People who purchase vast quantities of the bond shall be regarded as doing a patriotic deed for the construction of a strong nation. They will be highly regarded politically and economically."

Source: *Cabinet Public News* (27 March 2003); *Rodong Sinmun* (30 March 2003). Various issues of *Choson Sinbo*.

When looking at the sales conditions of this bond, the People's Life Bond does not satisfy the conditions of a financial product. The most important standard for a bond in terms of being a financial product is its profitability, its stability, and its ability to be retrieved. Normally, a government bond provides low interest because a nation or a government organization issues the bond and guarantees the stability of the bond. However, the conditions in Table 2-5 do not mention anything related to interest or interest accumulation. The only profitability is from the prize money that might be obtained through draws. Furthermore, although the first draw was held in December 2003 and the winners were present, specifics of the prize money have not yet been announced. Hence, in terms of profitability, it is considered that the bond is similar to a lottery.⁹

⁹ In North Korea, a lottery "has the same utilization purpose as a valid currency and of rendering convenient the currency circulation." Lotteries are used as expenditure for economic development enhancing the people's living standard. Lotteries are also used even for average savings. The government encourages participation in this process by providing goods or cash to the lottery winner.

Accrued interest from financial assets is a form of compensation for the sacrifice of current consumption. Hence, a government bond that does not generate interest not only lacks compensation for the sacrifice of current consumption but also causes losses in case of inflation. North Korea is currently experiencing annual inflation rates of several hundred percent. Therefore, the bondholder will suffer losses in real income when he or she retrieves the principal after ten years. Hence, the People's Life Bond actually results in a permanent transfer of real income from the people to the government at the expense of the people.

The stability of the North Korean government's bonds is also problematic. In North Korea, the general public was often forced to have savings in the banks. The government has even limited or completely disallowed the withdrawal of savings from savings accounts. Hence, the government could assign a savings account rather than pay cash when the government bond matures. Furthermore, a discussion about currency reform has materialized and has created concerns among North Korean citizens. The state has periodically executed currency reforms in order to unilaterally absorb currency assets when there is excess currency in circulation. As a consequence, there are concerns that the government bond holders will suffer losses in financial assets. Depending on whether the sales price for the government bonds is decided according to a convertible currency standard, it is highly probable that the North Korean government bonds will not satisfy the stability standards.

In North Korea, private trading of government bonds is restricted; hence, there is a convertibility issue with the bonds when bond holders need cash. Trading of bonds between citizens is not allowed in North Korea, and there is no market for this kind of transaction. Therefore, the purchased bond cannot be converted to cash unless the government purchases it or the bond matures.

In short, the People's Life Bond issued by North Korea does not satisfy the criteria of profitability, stability, and convertibility when evaluated as a financial product. Therefore, it should be regarded simply as a means of raising government revenue.

3. Sales Amount and Sales Method of North Korean Government Bonds

The successful sale of North Korea's government bonds depends on whether the entire expected quantity is sold. North Korea has not revealed the exact amount of government bonds sold, and the assumption is that the required amount of government bonds to be sold is approximately 10 percent of the 2003 budget. The basis for this assumption is that North Korea announced in 2003 that budgetary income increased 13.6 percent from the previous year. This figure is 10

percent more than the average rate of increase, which is 4 percent. Thus, one can assume that the excess 10 percent will be filled through the issuance of government bonds.

Table 2-2 shows the assumed changes in the budget size using 2000 as the base year for prices. If, in 2003, 10 percent of the budget must be filled through government bonds and using 2000 prices as the base, the exact amount would be 2.53 billion won. To convert this amount to current prices and wage levels, which jumped 15 to 20 times (after the July 1 Economic Reform Measures), the central government must sell 38–50.6 billion won worth of government bonds.¹⁰ If one calculates the burden per household when assessing the feasibility of this plan, it is as follows: assuming a total of 20 million households, each citizen must purchase 1,900–2,530 won worth of government bonds. When assuming that each household consists of four members, that household must purchase 7,600–10,120 won worth of government bonds to reach the government's goal. In other words, for the government bond schema to succeed, each household must spend four to five months' worth of wages (average monthly wage is 2,000 won) on purchases of government bonds.

Selling this amount of government bonds seems infeasible when one considers the fact that the profitability of government bonds is negative. Hence, this plan is impossible if it is left solely to the people's free will. It is probable that sales of government bonds will be executed through an organized sales network, which will forcefully sell the bond to the people. And in the tenth round of the Sixth Supreme People's Assembly, North Korea passed laws related to the creation of a sales network for selling government bonds. North Korea stated that "the issuance of People's Life Government Bond shall progress by combining the principles of the people's will and public obligation." This statement shows that the sale of government bonds will not be based solely on the people's will but also on forceful sales of the bond as public obligation (*Rodong Sinmun*, 30 March 2003).

The Cabinet Public Report of the North Korean government revealed that the sale of government bonds will be executed through an organized and administrative method of sales rather than individual sales.¹¹ The reason behind this

¹⁰ The rate of increase in price level is different according to products and categories. However, the standard wage level was 110 won before the July 1 Economic Reform, and it has increased to 2,000 won. Hence, the assumption is that it would be realistic to calculate that the price level increased 15 to 20 times.

¹¹ "In order to guarantee the outcome of the sales of the People's Life Bond, a temporary council for People's Life Bond will be organized in the center, province, city, and county level. On the sub-level, a commercial attaché for the government bond will be established and organizations, firms, districts, and towns will organize a government bond sales cooperative" (*Cabinet Public Report*, 27 March 2003).

approach is that North Korea's organizations and firms can directly manage the profit they generate (since the July 1 Economic Reform) and, hence, directly possess the necessary purchasing power. Furthermore, those entities can conveniently use their organizations to influence the process of sales. Therefore, the People's Life Government Bond will be sold mainly through organizations and firms.

However, the progress in government bond sales does not seem easy. North Korea has extended the original final sales date from the end of August to November.¹² However, as stated in the previous section, the question of whether the sales activities will continue until the sales goal is reached is unclear, considering the vast sales plans.

4. Effects of the Issuance of the People's Life Bonds

North Korea is expecting to raise government income by issuing government bonds. The fact that North Korea is not planning to raise government revenue by issuing more of its currency reflects North Korea's concern for inflationary pressure. Government bonds will help decrease inflationary pressure. Through those measures, macroeconomic stability will be restored, and a stable relationship between products and prices will be maintained. As a result one can deduce that the North will acquire the necessary capital to expand economic construction and increase the efficiency of economic planning. However, the magnitude of the effects that the government bonds will create depends on the extent of the sales.

It is known that North Korea has used the revenue from the People's Life Bond to construct power plants such as the Baekam and Orangchon plants. Other uses of the revenue include infrastructure construction projects, improvements of the social overhead capital in Pyongyang such as the construction of Seungrhee Street and Yungkwang Street, and the modernization of trains. The revenue from the People's Life Government Bond has mostly been allocated for urgent infrastructure construction projects. This use can be seen through announcements claiming that the revenue from the sales "has been allocated to various sectors of the people's economy for the enhancement of the people's lives, and has reaped many benefits."¹³ It can be deduced that the sales of the government bond have progressed in an organized and large-scale manner, which temporarily relieved North Korea's budget insufficiency. Most notably, investments in gen-

¹² *Minju Choson* (29 November 2003).

¹³ *Choson Sinbo* (19 December 2003).

erator facilities can be expected to have a positive ripple effect on the activity of other economic sectors.

The North Korean government probably absorbed the currency circulated to the people through the sales of government bonds. This absorption likely decreased the inflationary pressure generated by increased amounts of currency. However, the issuance of government bonds transferred the currency held by the people to the government's budget. Hence, it is probable that the sale of government bonds decreased the rate of inflation, rather than decreasing the absolute amount of currency or inflationary pressure.

D. Conclusion

If one looks at the 2003 budget, it is obvious that North Korea has abandoned its traditional approach of budget surplus and balanced budget while adopting expansionary policies for budget management. The government decided to use citizens' excess funds to fill insufficiencies in the budget.

It can be said that the regime's decision to acquire capital and decrease inflationary pressure by using internal capital for investment expansion is a suitable policy direction. However, the government considers the bond as a vehicle for acquiring capital, not as a financial product. The systematic transfer of the people's assets into the public sector shows that North Korea has not been able to abandon its socialist economic management methods.

North Korea's expansionary fiscal policy and bond issuance confirms the budget insufficiency and the growth of the private sector. It may be deduced that—through the July 1 Economic Reform measures—the private sector will grow further. Hence, government needs to seek a fundamental change in its view of the budget. If the government is to solve the fundamental problems of the budget, there needs to be a reorganization of the conceptual understanding of budget expenditure and a wide-scale reform in national income prospects.

Primarily, the expenditure mechanism is breaking away from its traditional ration system, but a systematically coherent alternative has not been provided. Consequently, there needs to be a new role of the state in economic management. This new role demands a change in the sphere in which the state will supply its public assets along with a revision in the provision of and benefits from the social security system. Also, the state needs to decide the sphere of free supply and the level of personal financial burden in education and health. In the present situation, the state maintains its earlier system, yet it cannot supply stipulated health or educational benefits because of insufficient funds. The fact that many individuals in North Korea hide money in the home rather than saving in the

bank can prove only that the system has failed. Hence, a more efficient plan would provide purchasing possibilities for the general public who have money while using that money to guarantee minimal benefits to the people who have none.

The most important area where the state needs to reduce its interference is the management of state-owned enterprises. The government needs to allow firms to invest independently and to produce under independent responsibilities. Meanwhile, the government should implement taxation and usage fees for production facilities. Unless this kind of change is made, it will be impossible to stop firms' dependency on the state.

An effort is needed to find new sources of government revenue. There also needs to be a transformation of the government income structure, which is currently based on management income from state-owned organizations and firms, into a system based on fees for production facilities and taxes. Furthermore, a commercial financial institution should be established and managed to render investment activities that would be possible for private companies.

North Korea has already partially increased individual profit calculations in various sectors while also collecting both land usage fees and installation usage fees. However, the state still remains the main investor and manager of production facilities. In this situation, it is impossible for the state to escape from its budgetary burden. As a result, the government cannot supply sufficient levels of public goods and cannot escape from the economic crisis. It is already clear that restoring the collapsed socialist production mechanism is impossible. Hence, North Korea must reinstate a production mechanism that is closest to its policy goals while redefining the role of the state. This action will consequently redefine the role of the budget and provide integrity to the system.

References

In Korean

- Hong Taek-ki. 1991. "Conditions of China's Financial Support Policy and Reform." *Research of China*, Vol. 10.
- Jung Gap-young. 1990. "Basic Policy Direction of North Korean Socialist Economic System." Lee, Tae-uk ed. *North Korea's Economy*. Seoul: Eulyoomunhwa Publications.
- Kim Byung-il. 1981. "National Development and Policy." *Budget Policy*. Seoul: Korean Development Institute.
- Kim Won-jin. *Research in the Changes in North Korea's Budget System and Its Characteristics—Based on Comparative Analysis with China and the*

- USSR. Incheon: Inha University.
- Kim Yong-woo. 1992. *Research in the Question of Unification* 4 (2). Seoul: Ministry of Unification, pp. 284–317.
- Kim Young-bong. 1987. *Theory of Economic System*. Seoul: Pakyoung Publications.
- Korea Institute for National Unification. 1985. *Data of North Korean Economy. Compilation*. Seoul: Korea Institute for National Unification.
- Lee Jong-ik. 1992. *Theory of Financial Administration*. Seoul: Pakyoung Publications.
- Lee Sang-jun. 1985. *Theory of Communist China's Economy*. Seoul: Pakyoung Publications.
- Lee Tae-uk. 1990. *North Korean Economy*. Seoul: Eulyoomunhwa Publications.
- Ministry of Unification. 1988. *Abstracts of the North Korean Economy*. Seoul: Ministry of Unification.
- _____. 1989a. *Introduction to Communist China*.
- _____. 1989b. *Recent Picture of North Korea's Society and Economy*.
- _____. 1991. *Comprehensive Assessment of North Korean Economy in the 1990s*. Seoul: Ministry of Unification.
- _____. January 1991; December 1992. *Monthly North Korean Trend*.
- Oh Yong-suk. 1988. *Divergence from Marxist Economics in Communist Economic Blocs*. Seoul: Slavic Research History.
- Rodong Sinmun, Choson Sinbo*. Various issues.
- Shin Dong-chun and Lee Young-sun. 1997. "Investment in North Korea and the North Korean Economy." *Economic Research* 44, no. 2.
- Shin Dong-chun and Yoon Deok-ryong. 1999. "Cost of Unification and the Reasonable Investment Distribution." *Economic Research* 47, no. 3.
- Social Science Publication. 1985. *Dictionary of Economy*, Vol. 1–2. Pyongyang: Social Science Publication.
- Yoon Deok-ryong and Park Soon-chan. 2001. *Estimation in the Required Capital Demand for North Korea's Economic Recovery and Reasonable Ways for Investment Directions*. Seoul: Korea Institute for International Economic Policy.
- Yoon Deok-ryong. 2003. "North Korea's National Revenue and Expenditure after the July 1 Economic Reform." *Prospects for North Korea's Economic Reform: A Study on the July 1 Economic Adjustment and Its Performance*. Seoul: Korea Institute for International Economic Policy: 156–185.

In English

- Andref, W. 1987. *Planned Industry and Development in Socialist-Oriented De-*

- veloping Countries: Obstacles and Reforms*. Seoul: Seoul University Social Science Research Center.
- Baldwin, Richard E. 1989. "The Growth Effects of 1992." *Economic Policy* 9, no. 2: 247–81.
- _____. 1992. "Measurable Dynamic Gains from Trade." *Journal of Political Economy* 100, no. 1: 162–74.
- Bergson, A. 1978. *Productivity and the Social System*. Cambridge: Harvard University Press.
- Bornstein, Morris. 1977. "Economic Reform in Eastern Europe." U.S. Congress Joint Economic Committee, eds., *East Europe Economy*. Washington, D. C.: U.S. Government Printing Office.
- Collins, H. 1982. *Marxism and Law*. Oxford: Clarendon Press.
- Dernberger, R. E. 1988. "Economic Policy and Performances." Joint Economic Committee ed. *China's Economy Looks towards the Year 2000*. Washington, D.C.: U.S. Government Printing Office.
- Fallenbuch, Z. M. 1970. "How Does the Soviet Economy Function without a Free Market." M. Bornstein ed. *The Soviet Economy*. Homewood, Ill.: Irwin.
- Francois, Joseph. F., and D. Roland-Holst. 1997. "Scale Economies. Imperfect Competition and Commercial Policy in Applied Models." J. F. Francois and K. A. Reinert ed. *Applied Methods for Trade Policy Analysis: A Handbook*. Cambridge: Cambridge University Press.
- George, G. 1970. "Finance and Banking in the U.S.S.R." Homewood, Ill.: Irwin.
- Horvat, B. 1987. "The Typology of Contemporary Socio-Economic Systems and the Trends of Reform." Seoul: Research Center for Social Sciences, Seoul National University.
- Kelsen, H. 1967. *The Pure Theory of Law*. Translated by Max Knight. Berkeley, Calif.: University of California Press.
- Levin, N. D. 1982. *Management and Decision Making in the North Korean Economy*. Illinois: Rand Corporation.
- Noland, Marcus, Sherman Robinson, and Monica Scatasta. 1996. "Modeling Economic Reform in North Korea." *Journal of Asian Economics* 8, no. 1: 15–38.
- Normanton, E. L. 1966. *The Accountability and Audit of Governments*. Manchester UK: Manchester University Press.

Chapter 3

Banking and Price Management

A. Banking System

1. Conventional Banking System of North Korea

The banking sector in North Korea has not served as an important source for the supply of funds to the economy in comparison to the state budget, because North Korea's socialist-planned economic system functions on the basis of government subsidy. Nevertheless, the banking sector plays a significant role because the central bank exercises comprehensive control over the circulation of money under the principle of "control by won."¹

The North Korean banking system can be summarized as operating under the concept of a monobank or one-tier banking system. Under this system, the Central Bank of the Democratic People's Republic of Korea (DPRK) not only takes on the functions of central banks—such as taking charge of government accounts, issuing banknotes, controlling currency in circulation, and maintaining the clearing and payment systems—but also undertakes banking business associated with commercial banks—such as extending loans to enterprises and accepting deposits from individuals. From the perspective of socialist planning, this banking system can be considered useful because it allows complete control over the economic activities among enterprises and individuals through the monitoring and regulation of the flows of funds.

¹ In the pattern of "control by ruble," used in the former Soviet system.

North Korea's current monobank system was established as a result of the banking system reform in 1976.² At that time, emboldened by the success of its Six-Year Economic Plan (1971–1976), North Korea seems to have intended to streamline the socialist planned system in every aspect of the economy, including the banking sector. Nevertheless, North Korea has since found itself experiencing a protracted long-term economic decline.³

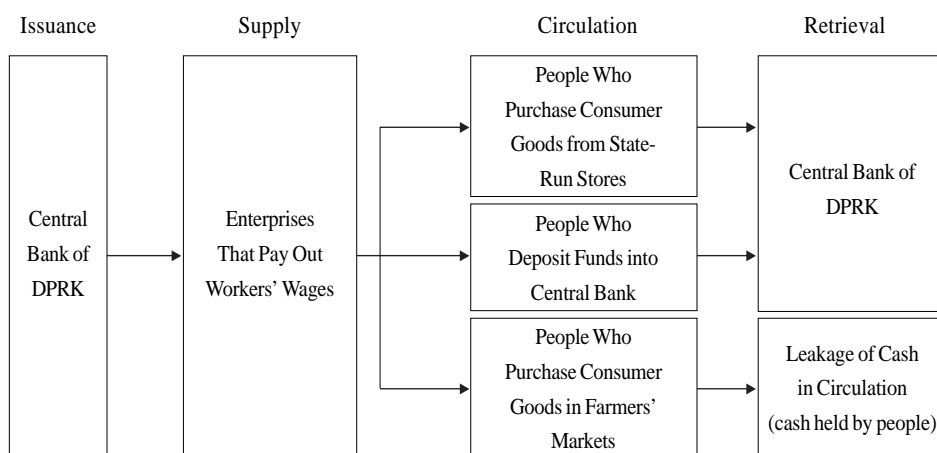
North Korea's monetary circulation system is categorized in two parts: "circulation of cash" and "non-cash settlement." Cash is usable only for the people's purchase of consumer goods and services, and the basic mechanism for its circulation is summarized in Figure 3-1. Settlements between state-owned enterprises for their trades of means of production, including intermediate goods and machinery, are achieved by transfers between their accounts in the central bank, which is called "non-cash settlement."

² Before 1976, there had been two major banking system reforms in North Korea. Before the establishment of the DPRK, a monobank system was introduced to the Soviet-occupied zone in 1946. At that time, a central bank carried out the commercial banking business with enterprises and individuals, including the acceptance of loans and the taking of deposits. In 1964, North Korea set up a commercial bank called the Industrial Bank and had it take over the central bank's commercial banking operations. Following the reform in 1964, the North Korean banking system apparently had the framework of what is termed a "two-tier banking system," in which the central bank and the commercial banks are separate. The next banking system reform came in 1976 with the merger of the Industrial Bank into the central bank, thus bringing a return to a monobank system.

³ The objectives of the Six-Year Plan can be summarized as parallel development of national defense and the economy, consolidating the physical and technological foundation of the socialist economy, modernizing industrial supplies and facilities, promoting technological innovation, liberating workers from heavy labor, etc. With the success of the Six-Year Plan between 1971 and 1975, North Korea registered 2.2-fold growth of total production in the industrial sector, 2.3-fold growth in the machinery and intermediate goods sector, and 2.1-fold growth in the consumer goods sector. North Korea went on to pursue a second Seven-Year Plan (1978–84) and a third Seven-Year Plan (1987–93).

In the second Seven-Year Plan period, North Korea managed to achieve its targets except for national income growth; during the period, national income grew 1.9 times, total industrial production grew 2.2 times, machinery and intermediate goods grew 2.2 times, and consumer goods grew 2.1 times. For the third Seven-Year Plan, however, the objectives had been set lower than before, at 2.1-fold growth in national income, 1.9-fold growth of total production in the industrial sector, and 1.4-fold growth of total production in the agricultural sector. The results of the third Seven-Year Plan were evaluated as a failure following the external shock left by the sudden collapse of the socialist system in the Soviet Union and East European countries.

North Korea underwent an economic ordeal in the 1990s, experiencing nine straight years of negative growth from 1990 to 1998, during which the worst situation occurred between 1995 and 1997. It is referred to by North Koreans as the "March of Hardship." In 1999, North Korea saw the decade's first positive economic growth of 6.2 percent, indicating that the economy was climbing out of its trough. The positive trend was sustained through 2002. North Korea has not announced any further economic development plans as of the date of publication since the third Seven-Year Plan.

Figure 3-1. Circulation of Cash in North Korea's Conventional Banking System

The central bank's role in monetary control has mainly been to maintain a balance between "desired cash stock" and "cash in circulation" in the economy. Since the middle of the 1990s, however, the bank's ability to regulate the cash stock has weakened considerably, with the mushrooming of farmers' markets nationwide. The expansion of the farmers' markets occurred with the collapse of the national rationing system, as the country's economic stagnation deepened. Having found state-run stores bare of commodities, the people were driven to farmers' markets in search of grains and daily necessities. The growth of farmers' markets foreshadowed the paralysis of the conventional monetary system of North Korea on the monetary side. The central bank could no longer exercise control over the circulation of cash because the two main channels of retrieving cash had been blocked: people could not purchase goods in state-run stores, and they avoided making bank deposits in the central bank. Thus, there was continuous leakage of cash out of regular circulation.

In spite of the monobank system, in which a central bank theoretically covers all banking business, there are some exceptions. The Foreign Trade Bank takes charge of external banking business including foreign clearing and settlements; contracts with foreign banks; deposits, transfers, and exchange of foreign currency; setting of the foreign exchange rate, etc.⁴ The Golden Triangle Bank is in charge of banking business in Rajin-Sonbong Economic and Trade Zone, and

⁴ In addition, there are banks that deal with external clearings and settlements such as Daesong Bank, Changwang Credit Bank, and Kumgang Bank. Although those institutions go under the name of "banks," they may be considered "windows" of the Foreign Trade Bank.

the Credit Department of Collective Farm runs it in agricultural areas.

North Korea practices a bank deposit system to mobilize idle funds held by the people. By types, there are ordinary deposits (similar to demand deposits, with a 3 percent yearly interest rate); lottery-type deposits (depositors enter a quarterly lottery, with no interest rate); savings deposits (similar to savings deposits, with a 3.6 percent yearly interest rate); and tagged deposits (similar to a checkbook, except that it is possible to withdraw by mark of bankbook, with no interest rate). The central bank makes loans to enterprises using the funds mobilized by the people's deposits and insurance premiums, the bank reserves, and the floating fund of enterprises held in their accounts. The bank loan system is meant to supplement government fiscal activity, by which enterprises are supposed to make use of the loans for temporary accommodation with funds. All bank loans are given for the short term; the period of redemption is limited to 180 days for state-owned enterprises, 365 days (one year) for collective farms, and 120 days for corporative unions.⁵

2. Problems of the North Korean Financial System

We can assess the problems with the North Korean financial system from two aspects. One aspect is that the fund supply system, leaning mainly on government budget, results in low efficiency in the use of funds. This lack is because fiscal funds, which do not require enterprises to redeem the principal and interest, promote the expansion of economywide excessive demand for funds because enterprises always have a propensity to receive more funds than they need, and because the government cannot distinguish how efficiently each enterprise uses such funds.⁶

Another problem is that North Korea's conventional banking and monetary system was paralyzed by the economic difficulties from the middle of the 1990s. The progression was as follows: economic hardship; virtual collapse of the national rationing system; expansion of people's participation in farmers' markets for side jobs and purchasing daily necessities and food grains; emerging propensity among people to hold cash, avoid bank deposits, and prefer foreign currency; appearance of private loans; weakened central bank's power of monetary control and exhaustion of resources for loans; and paralysis of the banking and monetary

⁵ From the Institute for Law Research of Social Science Academy (1977, 175).

⁶ However, bank loans are more efficient than fiscal funds because the former impose an obligation to redeem the principal and the interest. For example, if enterprises get bank loans that are larger or less than they need, they have to pay extra interest or to experience funding shortages; thus, they try to get the exact amount of loans they need.

system of North Korea.

3. Changes in the Banking Sector after the July 1 Economic Reform

With the introduction of the July 1 Economic Reform, North Korea implemented several steps in the banking sector, including (a) a sharp devaluation of the currency and (b) the issue of high-denomination banknotes and government bonds (People's Livelihood Public Bonds).

a. Devaluation of Currency and Change in Official Foreign Currency

In August 2002, North Korea officially raised the won to U.S. dollar exchange rate from 2 won to the dollar to 150 won. Considering that the black market exchange rate at that time stood at 200 won = 1 dollar, we can interpret this change as an adjustment of the previous official exchange rate to a realistic level. Sharp devaluation may be understood as a parallel to an increase of prices and wages. But if one considers that the currency was devalued as much as 75-fold, which was much greater than the increase in wages (about 20-fold) and the prices of industrial goods, it seems that the government's objective was to encourage enterprises to produce more exportable goods.

In parallel with the devaluation, the black market exchange rate also increased sharply. Progression of the won to U.S. dollar exchange rate on the black market before and after 1 July 2002 was as follows: February 2002, 220 won; February 2003, 670 won; June 2003, 920 won.⁷

North Korea changed its official foreign currency from the U.S. dollar to the euro in December 2002. This measure reflects North Korea's attempt to gather foreign currency held by the public into the government's vaults.⁸ In spite of this change, foreigners may use the U.S. dollar in North Korea.

b. Issuance of Government Bonds and High-Denomination Banknotes

In March 2003, North Korea announced its intention to issue government bonds, called People's Livelihood Bonds, which were first actually issued in May 2003.⁹

⁷ *Donga Sinmun* (9 February 2003); KOTRA (24 June 2003).

⁸ The foreign currency consists of U.S. dollars, yen, and yuan. The estimated total amount in U.S. dollars is 960 million dollars (Park Suhk-sam 2002).

⁹ They are issued with three face values: 500 won; 1,000 won; and 5,000 won. The issuance day is 1 May 2003, and the maturity day is 30 April 2013. Redemption is by lottery; if a bond holder wins in the

The issue of bonds is a noted departure for North Korea, considering its previous negative stance toward such a fundraising policy. In fact, North Korea has issued bonds on only two occasions: in the mid-1940s when Korea had been liberated from Japanese colonial rule and in the early 1950s just after the Korean War.¹⁰

North Korea's exceptional decision to issue government bonds delivers a message that its economy is in a critical situation. The country is facing inflationary pressure created by the huge increase in workers' wages under the July 1 Economic Reform. If the country is to curb inflation, it is imperative to increase aggregate supply in the economy by stepping up investment in the electricity, agriculture, and light industry sectors. This situation has driven North Korea to issue bonds to cover the anticipated budget deficit generated by investment increases. According to an official from the Ministry of Finance of North Korea, the targeted bond sales amount is 40 to 50 billion won and the main share of the mobilized funds will be invested in power plant construction and modernization.¹¹

In addition, North Korea issued a new banknote of 1,000 won following the July 1 Economic Reform.¹² Hitherto, the highest denomination banknote had been 500 won.

4. Direction of Financial Reform

North Korea did not explicitly include financial reform in the July 1 Economic Reform. Without financial reform, however, the logic of the economic measures cannot be easily understood. The possibility of financial reform provides something of a puzzle. Perhaps financial reform is an unannounced part of the whole story of the measures. There are two possibilities for this enigma. One is that North Korea left out the financial reform by omission. The other is that the country has been deliberately readying it under wraps. The latter reason may be more plausible, considering that Kim Yong-sool, North Korea's vice minister of foreign trade, reportedly divulged the information in a closed seminar held by the International Forum of Tokyo on 2 September 2002 that a new bank, named

lottery, the principal and prize will be given, otherwise he or she gets the principal at maturity without interest.

¹⁰ North Korea has argued that because government bonds are issued under the capitalist system only to cover budget deficits, they are another form of exploiting people for taxation, whereas the issue of bonds under the socialist system is not relevant because a budget deficit is nonexistent.

¹¹ People's Korea (7 May 2003); *Rodong Sinmun* (28 September 2003).

¹² Voice of Russia (7 October 2002).

the Trust Bank, had been established in July 2002. From Mr. Kim's statement, we can guess that financial reform has been implemented or is under progress in North Korea, along with the July 1 Economic Reform.

We can address in two ways the case for the July 1 Economic Reform having to be accompanied by financial reform. First, North Korea is facing inflation of its currency as the approximately 20-fold increase in workers' wages may be rapidly translating into an expansion of cash stock, which is flowing into farmers' markets and is raising market prices. Under this scenario and to add to North Korea's woes, it appears the central bank has already lost the capability to control cash in circulation and now merely observes inflation occurring. However, the cost of inflation may be unbearable from the viewpoint of the North Korean government because it may lead to a situation where the populace challenges the party's authority as living standards worsen. If one considers the stance that the North Korean government may take, it is very important to reorganize the banking system to restore the central bank's monetary policy.

Second, with the July 1 Economic Reform, the augmentation of the self-support system for enterprises has led to the tapering off of government subsidies.¹³ North Korean enterprises are thereby suffering from a shortage of funds and are eager to borrow from banks to supplement the reduced subsidies.

We cannot fully comprehend North Korea's ideas about financial reform because the country has not disclosed its policy, but we can deduce its direction, as described next.

a. Disintegration of the Monobank System

North Korea's central bank is almost totally incapable of countering inflationary pressure. Realizing this inability, the government may set about breaking up the existing monobank system by establishing commercial banks to take over the central bank's commercial banking activities. This kind of banking reform may be relevant in dealing with inflation in that—if the newly established

¹³ There is a possibility that the July 1 Economic Measures may have the effect of shrinking government budget revenue and expenditure simultaneously. Decrease of budget spending may come with the abolition of the rationing system and the stepping up of self-support for both households and enterprises. Reduction of budget revenue may be led by the newly strengthened incentive system, because the government should allow enterprises to accumulate internal reserves by reducing turnover tax and corporate profit tax, which hitherto have covered about 70 percent of total budget revenue. But for the time being, North Korea must frame a deficit budget, given that expenditure cannot immediately be curtailed because of the increased investment needed for economic recovery. Budget revenues will be immediately reduced by putting in place the new incentive system. We can guess that North Korea's decision to issue government bonds in May 2003 reflects the materialization of a budget deficit.

commercial banks successfully induce people to place cash on deposit—the central bank will regain control over monetary policy by way of commercial banks and by using the monetary policy tools of a market economy, such as reserve requirements and a rediscount system. The success of the banking reform is critically dependent on how effectively the commercial banks can bring people to place their cash holdings on deposit. In this regard, the commercial banks need to provide service from commercial motivation. Services attractive to clientele may include providing higher interest rates, guaranteeing free deposit and withdrawal, protecting depositors' information, and developing a variety of financial instruments.

b. The Switch from Budget Subsidies to Bank Loans Given to Enterprises

North Korea may initiate a shift from the subsidies given to enterprises to bank loans. This change may serve a double purpose for the economy: on the one hand, the government may narrow the budget deficit by cutting back government subsidies given to enterprises and by reducing expenditure; on the other hand, the enterprises will have to put more effort into improving the efficiency of their production and management so they can generate profits and pay off the principal and interest from the bank loans.

Among the items of government budget expenditure for assigning subsidies to enterprises, the basic construction funds and operating funds contained in expenditures for the people's economy are funds that may be shifted to bank loans. The newly established North Korean commercial banks may launch the extension of loans to enterprises under the "Provisions of Foreign, Joint Venture, and Equity Venture Banks in the DPRK."¹⁴

c. Introduction of Systems of Collateral and Insolvency

For commercial banks to make and retrieve loans to enterprises seamlessly, it is important to develop a bank loan security system. Under the existing North Korean banking system, enterprises are supposed to offer physical materials and productive funds as security, according to guidelines for bank loan organization (plan, purpose, redemption, security). However, in reality, bank loan security

¹⁴ In those provisions, it is stipulated that (a) the maximum limit of loans for banks is up to 25 percent of their capital stock, (b) the maximum guaranty is up to 20 times the equity capital of banks, and (c) the maximum limit of bank loans held by an enterprise is up to 25 percent of its equity capital from a single bank and up to twice its equity capital in the case of borrowings from various banks (Institute for Law Research 1997, 178).

has been applied so loosely that the central bank merely imposes an overdue interest rate when holders fail to redeem. This kind of lax bank loan security system must be replaced by stronger enforcement if commercial banks begin giving large-scale loans to enterprises. Otherwise, the trend is that enterprises prone to default on loans present the economywide moral hazard by commercial banks of insolvent accounts.

Although we cannot determine exactly how North Korea will arrange its bank loan security system, it is possible to make a prediction. The system of bank loan security is closely related to the institution of property ownership: enterprises do not have ownership of machinery, land, or claims on sales, although they may have the right to use them. This absence of ownership is because enterprises themselves and all of their property are “property of the people as a whole.” In this respect, North Korean enterprises at the moment have almost nothing to put up as collateral for bank loans. If the country is to establish a system of bank loan security, there must be some changes to the concept of “property of the people as a whole.” For example, if specific values are assigned to the right to use the properties that are now used by the enterprises, such quantified value might be accepted as collateral for bank loans.¹⁵

Provided that a system for the insolvency of enterprises is established, such a working bank loan security system must carry legal binding force. When enterprises do not repay bank loans, banks should declare them insolvent and seize the rights attached to using the properties that were put up against the loans. Introducing insolvency regulations will eventually serve to consolidate the independent accounting system for North Korean enterprises. Failing to improve efficiency in management and production offers a real threat for failure to generate profits and to repay bank loans.

d. Establishing a Bond Market

Establishing a bond market is an important component in the process of financial reform. To borrow funds from the central bank, commercial banks must offer eligible bonds as collateral. Thus, establishing a bond market is one of the essential elements of the reform.

¹⁵ It is a firmly established concept of North Korean civil law that the right of occupation is inseparable from property ownership, while the right of using property is severable from it (Institute for Law Research 1997, 473). In a similar context, Park Hong-yeop (2001) explains that the enterprises may have the right to use “the property of the people as a whole,” but they do not have the right to occupy it.

e. Introducing Developed Financial Technologies

The dissolution of the monobank system and establishment of a two-tier banking system may be thought of as the “hardware” for a market-type financial system. But financial reform is more. The individuals operating the system must be its “software” and must work in the right mindset. In this respect, North Korea needs lessons and help from the outside world concerning issues of methodology for the central bank’s monetary policy, developing commercial banking business, educating professional bankers, and exchanging experience in financial reform with other countries.

Considering the above points, North Korean banking reform should not be limited to establishing commercial banks but should be accompanied by an entire set of measures, including adopting a system for bank loan security and the regulation of insolvency, establishing a bond market, and fostering a market-oriented way of thinking among banking professionals. In view of its centrality to the transition to a market system, banking reform may be an indicator by which we can assess the direction and speed of North Korea’s overall economic reform in the future.

B. Price System

1. Conventional Price System

In North Korea, prices have traditionally been set according to the principles of socially necessary labor expenses, an ensured profit, and the maintenance of a price balance. First, those principles mean that the price of a commodity should be set on the basis of socially necessary labor expenses that constitute its value. Thus, the socially necessary labor expense is equal to the commodity’s value, which is then equal to its price. Second, prices should ensure the profitability of state-owned enterprises. Third, prices should be administered with a plan and objectives that consider factors such as supply and demand and distribution of income.

North Korean prices are classified into wholesale prices, retail prices, and government purchasing prices of grains, portage, and fees. Wholesale prices are applied in trading producer goods among enterprises and in delivering consumer goods from manufacturing plants to state-run retail stores (or distribution companies). Retail prices are applied in transactions of consumer goods between state-run retail stores and customers. Government purchasing prices of grains are applied when the government purchases agricultural products from collective

farms. Portage is the price for using a means of transportation, and fees are for using services and public facilities.

The components of a price are its costs, net social earnings, and value added.¹⁶ Cost is a basic factor and makes up a major portion of the price of a product. It becomes a measure of the price balance between prices of various products. It consists of expenses of raw and intermediate materials, fuel, electricity, labor, and depreciation. Net social earnings consist of the profit of enterprises and turnover tax, which constitutes the main sources of the government budget. Almost all of the profit is channeled into the government budget through profit tax, which is similar to a corporation tax, whereas turnover tax is an indirect tax levied on the wholesale price. Value added covers the costs and profits of distribution companies.

These components figure into prices differently. Wholesale prices, for example, are set by cost and net social earnings (profit plus turnover tax), whereas retail prices are set as the wholesale price, plus the value added of distribution companies. The government purchasing prices of grains, portage, and fees are set in a way similar to wholesale price.

North Korean pricing policy is supported by the principles of “one-tier pricing” and price discrimination between general public consumer goods and luxury goods. The principle of one-tier pricing means that the price of the same product should be the same nationwide. The concept provides a logical basis for price setting and control by the National Committee of Price Setting and the local administrative organs. To maintain the price discrimination policy, North Korea has been giving subsidies to distribution companies from the government budget to compensate for the discrepancy between the buying and the selling price.

2. Changes in the Price System

Implementing the July 1 Economic Reform of 2002, North Korea raised the state-fixed prices of food grains, fuel, electricity, transportation, and house-rent from tens to hundreds of times. (See Table 3-1.)

North Korea changed the criterion for setting the prices of products by benchmarking the price of rice. The method of setting the price of rice also changed. In the past, the price was determined exclusively by production costs such as those of water, electricity, and fertilizer. But now, the international market

¹⁶ North Korea considers net social earnings as the labor share created by workers in the productive sector. But one characteristic is that the share is not distributed directly to workers but distributed indirectly through the government budget.

price and domestic supply and demand are taken into account, in addition to the production cost. Although government still holds fast to its power to set prices, it has given some discretion in setting them to local factories that are producing mostly consumer goods. Local factories can determine the prices of products under the guidance of superior authorities following the standards set by government.

Table 3-1. Adjustment of Prices and Wages by the July 1 Economic Reform

	Item/ Class/ Currency	Unit	State-Fixed Prices			Farmers' Market Prices	Price Difference (times)	
			Before July 2002 (A)	After July 2002 (B)	Increase (B/A, times)		Before July 2002(C)	After July 2002(C/B)
Prices	Rice	1 kg	0.08	44	550	49	613	1.1
	Corn	1 kg	0.03	24	800	34	1,120	1.4
	Power	1 kWh	0.035	2.1	60			
	House rent	Pyong- yang area	Almost free	2 won for 1 square meter	—	—	—	—
Wages	Worker	1 month	100	2,000	20	—	—	—
	Miner	1 month	240–300	6,000	20–25	—	—	—
Foreign Exchange Rate (changed August 2002)	USD	\$1	2.15	150	70	200 (before) 300–350 (after)	100	1.5–1.8

3. Changes in Relative Prices

By tracing changes of relative prices for all products, we can analyze the intended direction of North Korea's economic policy as implied by the increase in nominal prices. Let the relative price of item j against item i be defined as the result of the nominal price of j divided by the nominal price of i . We can set a formula for calculating the change in the relative price of item j against item i by comparing the prices before and after the July 1 Economic Reform, as follows:

$$p_{ji} = \frac{p_{ji}^1}{p_{ji}^0}, p_{ji}^0 = \frac{p_j^0}{p_i^0}, p_{ji}^0 = \frac{p_j^1}{p_i^1}$$

Where

p_{ji} : item j 's change rate in relative price with respect to item i period before and after July 1, 2002.

p_{ji}^0 : item j 's relative price with respect to item i before July 1, 2002.

p_{ji}^1 : item j 's relative price with respect to item i after July 1, 2002.

p_i^0, p_i^1 : item i 's state-fixed price both before and after July 1, 2002.

p_j^0, p_j^1 : item j 's state-fixed price both before and after July 1, 2002.

For example, looking at the change in the relative price of rice (j) against sports footwear (i), we know that before the July 1 Economic Measures, the price of 1 kg of rice at the government purchasing price had been 80 jeon (0.8 won), and the price of a pair of sports footwear had been 8 won. Thus, the relative price of rice against sports footwear had been 0.1 (0.8 won/8 won). After the July 1 Economic Measures, the price of 1 kg of rice rose to 40 won, and the price of a pair of sports footwear rose to 180 won. Thus, the relative price of rice became 0.22 (40 won/180 won). As a result, the relative price of rice against sports footwear increased by 122 percent $(0.22/0.1 - 1)$.¹⁷

By using price data for sixteen items for which we can obtain nominal state-fixed prices before and after the July 1 Economic Reform, we may calculate the average change in the relative price for each item using the following formula:¹⁸

$$\overline{p}_j = \sum_{i=1}^{16} p_{ji} / 16$$

The results may be summarized as follows: the items whose average relative price increased are seasonings (501 percent), bean oil (351 percent), electricity (141 percent), sleeping car fare (141 percent), government purchasing price of rice (100 percent), diesel oil (52 percent), smokeless coal (43 percent), soybean paste (24 percent), and soy sauce (17 percent). The items whose average relative

¹⁷ This price can be interpreted in a different way as meaning that before the economic measures, a pair of sports footwear could have been traded for 10 kg of rice and after the measures they could be swapped for 4.5 kg of rice, which means that the government purchasing price of rice more than doubled in real terms.

¹⁸ That is to say, the average change of the relative price of item j is calculated by averaging the changes of its relative prices against the other fifteen items and itself.

Table 3-2. Changes in Relative Prices by Item after July 1, 2002

(unit: times)

$I \backslash J$	Rice ¹	Bean Oil	Seasonings	Soybean Sauce	Soybean Paste	Soju (distilled liquor)	Pork	Soap	Laundry Soap	Sports Footwear	Coal	Diesel Oil	Electricity	Smokeless Coal	Subway Train	Sleeping Compartment Berth
Rice ¹	1	2.25	3.00	0.58	0.62	0.36	0.49	0.20	0.33	0.45	0.20	0.76	1.20	0.71	0.40	1.20
Bean Oil	0.44	1	1.33	0.26	0.27	0.16	0.22	0.09	0.15	0.20	0.09	0.34	0.53	0.32	0.18	0.53
Seasonings	0.33	0.75	1	0.19	0.21	0.12	0.16	0.07	0.11	0.15	0.07	0.25	0.40	0.24	0.13	0.40
Soybean Sauce	1.72	3.87	5.16	1	1.06	0.62	0.83	0.34	0.57	0.77	0.34	1.31	2.06	1.22	0.69	2.06
Soybean Paste	1.62	3.64	4.85	0.94	1	0.58	0.79	0.32	0.54	0.73	0.32	1.23	1.941	.15	0.65	1.94
Soju (distilled liquor)	2.79	6.28	8.37	1.62	1.73	1	1.36	0.56	0.93	1.26	0.56	2.12	3.35	1.98	1.12	3.35
Pork	2.06	4.63	6.18	1.20	1.27	0.74	1	0.41	0.69	0.93	0.41	1.56	2.47	1.46	0.82	2.47
Soap	5.00	11.25	15.00	2.91	3.09	1.79	2.43	1	1.67	2.25	1.00	3.80	6.00	3.56	2.00	6.00
Laundry Soap	3.00	6.75	9.00	1.75	1.85	1.08	1.46	0.60	1	1.35	0.60	2.28	3.60	2.13	1.20	3.60
Sport Shoes	2.22	5.00	6.67	1.29	1.37	0.80	1.08	0.44	0.74	1	0.44	1.69	2.67	1.58	0.89	2.67
Coal	5.00	11.25	15.00	2.91	3.09	1.79	2.43	1.00	1.67	2.25	1	3.80	6.00	3.56	2.00	6.00
Diesel Oil	1.32	2.96	3.95	0.77	0.81	0.47	0.64	0.26	0.44	0.59	0.26	1	1.58	0.94	0.53	1.58
Electricity	0.83	1.88	2.50	0.48	0.52	0.30	0.40	0.17	0.28	0.38	0.17	0.63	1	0.59	0.33	1.00
Smokeless Coal	1.41	3.16	4.22	0.82	0.87	0.50	0.68	0.28	0.47	0.63	0.28	1.07	1.69	1	0.56	1.69
Subway Train	2.50	5.63	7.50	1.45	1.55	0.90	1.21	0.50	0.83	1.13	0.50	1.90	3.00	1.78	1	3.00
Sleeping Compartment Berth	0.83	1.88	2.50	0.48	0.52	0.30	0.40	0.17	0.28	0.38	0.17	0.63	1.00	0.59	0.33	1
Average for Item, \bar{f}^j	2.00	4.51	6.01	1.17	1.24	0.72	0.97	0.40	0.67	0.90	0.40	1.52	2.41	1.43	0.80	2.41

Notes: 1. Government purchasing price; 2. average change in relative price of item j .

price decreased are pork (−0.03 percent), sports footwear (−10 percent), subway train fare (−20 percent), soju, i.e., distilled liquor (−28 percent), laundry soap (−33 percent), soap (−60 percent), and coal (−60 percent). (See Table 3-2.)

From the results above, we can derive the following implications in North Korean economic policy.

a. Rectifying Distortion of the Price System

North Korea's conventional price system had been distorted by the policy of price discrimination in such a way that the prices of standard consumer items (rice, soybean paste, etc.) had been very low, while those of industrial consumer goods (or luxury goods) were very high. But the analysis of changes in relative prices shows that the traditional price discrimination policy has been adjusted; the relative prices of what are termed general public consumer goods such as rice, soy sauce, and soybean paste were increased while those of industrial consumer goods such as sports footwear, soju, laundry soap, and soap were reduced. In this regard, we can hazard a guess that North Korea intended to ease the distortions of the price system by raising the nominal prices of all products.

b. Augmenting Production in Local Factories and the Agricultural Sector

We can interpret the increases in the relative prices of rice for government purchase and daily provisions such as seasonings, soybean oil, soybean paste, and soy sauce as reflecting a policy to encourage both workers at collective farms and local factories to expand production, by allowing them higher profits.

c. Increasing Government Subsidies to the Coal Mining Sector

The relative price of coal was decreased by 60 percent by the July 1 Economic Reform, which meant that the financial state of the coal mining sector would worsen considerably. Considering that coal is a prerequisite for producing electricity in North Korea, the government needed to provide subsidies to coal mines to compensate for the loss caused by the price adjustment. This compensation has increased the mine industry's dependence on government assistance. Such a policy of increasing subsidies to mines may be interpreted as *ad hoc* in the general context of the July 1 Economic Reform, because the economic measures' overt intention was to reduce government subsidies to enterprises and to encourage their greater responsibility and self-sufficiency.

d. Enhancing Profitability in the Electric Sector

The adjustment of prices under the July 1 Economic Reform should enhance the revenue of the electric sector significantly by about 200 percent, because the relative price of electricity was increased by 141 percent, and that of coal was decreased by 60 percent. North Korea may use the heightened earnings of the electric sector to support heavier subsidies to the coal mining sector.

4. Signs of Stabilizing Market Price

North Korea's July 1 Economic Reform first became known to the outside world in the latter part of July 2002. At that time, North Korea was expected to face inflationary pressures, potentially not only bringing about the breakdown of the economic system but also undermining the regime's stability. Contrary to expectations, however, this dreaded inflation does not seem to have materialized, because the purchasing power of a North Korean worker's wages in terms of market prices increased for the ten months following 1 July 2002.

To see the changes in the purchasing power of a worker's wages at market prices before and after the economic reforms, let us take two points in time—June 2002 and May 2003—and set an assumption that the price of rice represents the overall market price. In June 2002, 1 kg of rice cost 47 won in the marketplace (farmers' market) and an ordinary worker's monthly wage was 100 won, so a worker could purchase 2 kg of rice in the market with his monthly wage. As of May 2003, ten months after the July 1 Economic Reform, the price of rice had risen to 230 won, but an ordinary worker's monthly wage had been raised to 2,000 won, making it possible to buy 8.7 kg of rice with a month's wages.¹⁹

From this change, we can highlight two points. First, during that time, the nominal price of rice in the farmers' market had increased by about 400 percent from 47 won to 230 won. Second, during that time, the purchasing power of a worker's wage in the farmers' market increased by more than 300 percent. Assuming that purchasing power was changing in the inverse direction to the changes in "price in real terms," we can then say that the price in real terms in the marketplace had decreased by 300 percent during the ten months after July 2002.

Although we do not know exactly what made the price in real terms in the

¹⁹ In Eorang County, North Hamgyong Province, on 10 May 2003, according to evidence provided by a North Korean refugee, *Information of Intra Korean Economic Co-operation* (in Korean), published by KITA, 18 June 2003.

marketplace decrease, there are several possible reasons. First, government policy may have promoted a switch in the channel for distributing resources from state-run stores to the marketplace. The increased supply in the marketplace would then have driven prices downward, even without any change in aggregate supply. Second, North Korea might have produced more consumer goods by investing more resources in light industry than in heavy industry and, as a result, may have generated an actual increase in aggregate supply. Third, the North Korean government may have imposed controls over the market prices to keep them down.

5. Attempting Price Liberalization by Expanding Free Markets

On the path to market reform, price liberalization is considered a prerequisite step, and North Korea cannot avoid this step if it is seriously attempting to move toward a market economy. There is a possibility that North Korea may implement price liberalization in a way different from other economies in transition. Most countries undergo this step by announcing, for example, the date and range of liberalized prices. But North Korea may be undertaking price liberalization by implicit rather than explicit means, thereby expanding the free markets.

North Korea's KCNA (Korean Central News Agency) announced on 10 June 2003 that the country would reorganize conventional farmers' markets progressively by changing them to "composite markets," where industrial consumer goods could be traded alongside agricultural products. KCNA also said that it would organize this kind of market nationwide. By adopting the composite market officially, North Korea put in place an institutional and physical framework that would enable consumer goods to be distributed through the markets.

Although North Korea has not made any explicit statement concerning this aspect of reform, the introduction of composite markets for consumer goods may represent the establishment of a "market for intermediate goods" for producers of such things as raw materials and machinery, in line with Chairman Kim Jong-il's reported order in October 2001 to establish and operate this type of market.

There is a strong possibility that the free markets—including the composite markets and the markets for intermediate goods—will become the major channels for distribution of all resources, including consumer and producer's goods, and will effectively take the place of the conventional state markets.

In this light—even if North Korea ostensibly maintains the state-fixed price system—the wider the coverage of free markets becomes, the greater the price liberalization realized in the economy, thus rendering the state-fixed price system meaningless.

Reference

In Korean

- Bank of Korea. 2002. "The Meaning of North Korea's Recent Economic Reform and Prospects." Press Release, 23 August. Seoul: Bank of Korea.
- _____. 2003. "Analysis on North Korea's Government Budget 2003." *North Korean Economy Newsletter*. Seoul: Bank of Korea.
- _____. 2003. "Gross Domestic Product of North Korea in 2002." Press Release. 4 June. Seoul: Bank of Korea.
- Institute for Law Research of Social Science Academy (Sahoy-Gwahakwon Beobhak-Yongooso). 1997. *Dictionary of Act of Civil Affairs* (Minsabeob-sajeon). Pyongyang: Social Safety Press (Sahoy-anjeon-choolpansa).
- Korea International Trade Association (KITA). 2003. *Information of Intra Korean Economic Co-operation 2003-32*. Seoul: KITA.
- Park Suhk-sam. 2002. "The Banking System of North Korea: Today and Tomorrow." *The Journal of Economic Policy*, 4 (3) (Autumn): 69-134. Seoul: Research Institute for International Affairs.
- _____. 2002. "The Private Sector Economy of North Korea." Bank of Korea Working Paper 2002-3. Seoul: Bank of Korea.
- Park Hong-yeop. 2001. "Relative Independence and Its Meaning of State-Owned Enterprises in Management." *Economic Research (Gyungje Yongu 2)*, Pyongyang: Science and Encyclopedia Press (Gwahak-bakgwa-sajeon-choolpansa).
- People's Korea. 7 May 2003.
- Roding Sinmum*. 28 September 2003.
- Social Science Publication. *Dictionary of Finance and Banking (Jaejeong Geuyong Sajeon)*. Pyongyang: Social Science Publication.

Part II

Industrial Management and Problems

Chapter 4

The Industrial Sector

A. North Korea's Recent Industrial Policy

North Korea's recent industrial policy can be summarized as regularizing production in leading sectors of the economy through technological improvements and increasing light industry production and as emphasizing science and technology.

After the failure of its third Seven-Year Economic Plan,¹ the country did not propose a new economic plan until 1998, when it announced a new economic policy approach, the *kangsungdaeguk kunseul lon* (theory of building a thriving and great country).²

The *kangsungdaeguk kunseul lon* aims to make industrial production regular by reviving the "leading sectors of the people's economy." Investment will be focused in the five leading sectors of the economy: agriculture, coal mining, electricity, rail transport, and metals. Although North Korea has emphasized leading sectors in the past, the current policy differs by aiming to normalize production in those sectors, rather than trying to increase productive input. Technological improvement refers to installing modern technology in factories and enterprises, and it includes the repair, servicing, or replacement of antiquated facilities, as well as automation of the production process. North Korea's overall

¹ In December 1993, North Korea announced that the third Seven-Year Plan had failed and designated the next two or three years as "a buffer period in the construction of a socialist economy." It also proposed its "Revolutionary Economic Strategy," which emphasized the so-called "Three Firsts" of agriculture, light industry, and trade.

factory use rate is currently estimated at less than 30 percent, and the first step in normalizing industrial production would be to repair or replace rundown facilities or to automate production processes.

Besides promoting normalization of production in the leading sectors through technological advancement, North Korea is trying to improve the people's living standards by promoting increased production in the light industry sector. Since the July 1 Economic Reform, efforts in this area have been intensified.

Another aspect of North Korea's recent industrial policy is the improvement of science and technology. The government's science and technology policy consists of normalizing production in the leading sectors through technological advancement and modernization, applying information technology (IT) to "Automate and Computerize the People's Economy" and fostering cutting-edge industries that are based on science and technology—including IT, computers, and biotech—to achieve a "Single Take-off."^{3, 4}

B. Industrial Conditions by Category

1. Mining and Manufacturing Industries

a. Heavy and Chemical Industries and Mining

In its effort to normalize production in the heavy industry sector, North Korea is focusing on repairing and upgrading existing facilities rather than on new construction. In 2002, heavy industry investment focused on repairing and modernizing the iron and steel manufacturing sector, as well as the nonferrous metal and mining sectors (see Table 4-1). According to North Korean reports, technology is being upgraded at the country's large iron and steel complexes, including Kimchaek, Hwanghae, Songjin, and Chollima, while modernization and computerization are being pursued at the Haeju and Danchon nonferrous metal refineries. In the mining sector, authorities are upgrading technology at the Musan and Eunyul iron ore mines and are expanding production capacity at the Bocheon and Yongyang nonferrous metal mines.

² The *kangsongdaeguk kunseul lon* slogan was introduced in 1998 by the Kim Jong-il regime. The slogan encourages developing a country that is ideologically, militarily, and economically strong. An economically strong country is referred to as "a country that invigorates the economy to further the development of socialism, and elevates the importance of economic independence."

³ Yang Moon-soo (2001, 9–17).

⁴ For more information on North Korea's recent science and technology policy, refer to chapter 13 of this report.

The machinery sector has yet to see significant progress, other than efforts related to inter-Korean economic cooperation, including the completion of the Pyonghwa Automobile Factory. Meanwhile, the chemical industry sector has improved production processes in the Hungnam Fertilizer, the Sunchon Vinylon, and the 2.8 Vinylon.⁵

Table 4-1. Investment and Technology Improvement in North Korea's Heavy and Chemical and Mining Industries, 2002

Category	Factory/Enterprise	Investment or Technology Project
Iron and Steel	Kimchaek Steel Complex	- Construction of sintering facility no. 1 and introduction of new oxygen process - Repair of cokes facility and introduction of cold rolling process
	Hwanghae Steel Complex	- Repair and automation of blast furnace
	Songjin Iron Complex	- Installation of storage bins, ceiling cranes, and passageways
	Chollima Iron Complex	- Extensive modernization of production process
Nonferrous Metal	Haeju Refinery	- Began development of low-frequency inductors and plasma welding machine
	Dancheon Refinery	- Began computerization of production process
Mining	Musan Mine	- Began computerization of separation process
	Western region steel mines, including Eunyul, Jaeryong, and Daetan	- Began technological improvement
	Yongyang Mine	- Completion and use of transport shafts and stopes; acquired capacity to produce tens of thousands of tons of magnesite yearly
	Bocheon Mine	- Improved quantity of colored metals such as gold, silver, and bronze by up to 85%
Machinery	Pyonghwa Automobile Factory	- Planned production of 15,400 Fiat automobiles by 2006
	South-North Test Factory for Farm Machine Repair and Research	- Completion of South-North cooperative venture
	9.11 Factory	- Began operation
Chemical	Hungnam Fertilizer	- Creation of sulfuric acid production process and modernization of fertilizer production process
	Sunchon Vinylon	- Manufacture of carbide by oxygen and electricity heating method
	2.8 Vinylon	- Began construction of caustic soda production process

Source: Ministry of Unification (2002).

Note: Derived from North Korean reports.

⁵ Ministry of Unification (2002).

Despite North Korea's efforts to normalize production in the economy's leading sectors, production appears to have fallen slightly from the previous year because of a shortage in energy and raw materials. This shortage was worsened by North Korea's nuclear weapons crisis, which led to the suspension of crude oil shipments from Korean Peninsula Energy Development Organization (KEDO) and to deteriorating external economic conditions. According to the Bank of Korea's *Estimate of North Korean GDP in 2002*, heavy and chemical production fell by 4.2 percent from the previous year, caused by factors such as decreased output of steel products and construction machinery. Considering that the 2001 growth rate for heavy and chemical industry was 4.1 percent, one can see that North Korea's industrial sector quickly reflected the worsened external conditions. Table 4-2 shows that North Korea's industrial production in 2002 remained far lower than in 1990.

Table 4-2. North Korea's Industrial Output

	Unit	1990	2000	2001	2002
Iron Ore	million tons	8.43	3.793	4.208	4.078
Nonferrous Metal	thousand tons	241	96	92	87
Automobiles	thousands	13	6.6	5.7	4.8
Steel	million tons	3.364	1.086	1.062	1.038
Cement	million tons	6.130	4.60	5.16	5.320
Fertilizer	million tons	1.195	0.539	0.5436	0.503
Synthetic Fiber	thousand tons	50	29	27	26

Source: Bank of Korea, *Estimates of North Korean GDP*, various issues.

In 2003, the emphasis in heavy industry investment is expected to remain on maintenance and modernization. As presented in its 2003 collective statement, North Korea's industrial policy is similar to that of the previous year except for a new emphasis on the defense industry. Electricity, coal, metals, and rail transport were selected as "key links in the people's economy," and it was stated that innovation in those sectors would lead to normalized production. North Korea has maintained the same basic industrial policy for years, probably because its lack of resources has given it little choice but to raise the productivity of its existing facilities. Toward this goal, North Korea is attempting to increase production in its metal factories and mines, including the Kimchaek Steel Complex, Chollima Iron Complex, Songjin Iron Complex, Hwanghae Steel Complex, Musan Mine, and Dancheon Refinery, while normalizing production through technology upgrades at the Daetan and Rakwon Machinery Factories.

The performance of North Korea's heavy chemical industry will probably worsen in 2003 because of continued external pressure in connection with the

nuclear crisis. This drop in production can already be seen from North Korean news reports on economic performance for the first half. They reported that only 53 factories and enterprises (15.9 percent less than in the previous year) had achieved their production goals for the period. The number of both heavy industry and mining factories that achieved their goals had declined (see Table 4-3).⁶

North Korea's nuclear standoff seems to be the main factor in the downturn of production. It has worsened the country's energy shortage by causing the suspension of oil shipments from KEDO, as well as the raw materials shortage by leading the decreased shipment of resources from abroad. Those conditions have had a negative effect on industrial production, with the heavy industry sector being hit especially hard.

Table 4-3. Factories and Enterprises That Achieved Targets for First Half

(unit: enterprises)

Year	Energy	Heavy Industry	Light Industry	Mining	Other	Total
2002	11	28	6	11	7	63
2003	20	11	10	6	6	53

Source: Ministry of Unification, *Weekly North Korean Trends*, no. 650.

Note: Derived from North Korean reports dated 1 June to 2 July 2003.

b. Light Industry

Along with the normalization of production in the leading sectors, North Korea has emphasized the improvement of living standards, and it is working toward this goal by attempting to increase light industry production, especially that of daily necessities. Light industry production was further expanded after the July 1 Economic Reform of 2002, when North Korea raised prices to levels similar to those in farmers' markets while also increasing wages in an attempt to expand supply and resolve the distribution imbalance in the economy. This move

⁶ The following factories and enterprises achieved their first half targets: In the heavy and chemical industry sector, the Nanam Mining Machinery Associated Enterprise, the 3.25 Factory, the 10.5 Automobile Machinery Factory, the Moranbong Automobile Machinery Factory, the Sariwon Tractor Parts Factory, the Second Metal Construction Associated Enterprise, the Chemical Construction Associated Enterprise, the Metal Construction Associated Enterprise, the Hamhung Industrial Construction Enterprise, the 32nd and 34th Chemical Factory Construction Enterprise, the 21st Metal Factory Construction Enterprise, the Dancheon Mining Construction Associated Enterprise, and the Gangso Geological Exploration Team. In the mining sector, the Dancheon Mining Construction Associated Enterprise; the Gangso Geological Exploration Team; and the Hwangnam, Pyongnam, Hamnam, and Pyongbuk Province Exploration Associated Enterprises. For more details, see Ministry of Unification (2002).

was risky, however, because it had the potential to worsen inflationary pressures. The possibility of inflation became a reality because of the recent nuclear standoff, which thwarted North Korean efforts to attract foreign capital and prevented the planned increase in production of daily necessities. As a result, North Korea was forced to promote expanded light industry production while relying solely on domestic resources.

The state's renaming of farmers' markets as general markets in March 2003, and the granting of permission to sell collectively made goods, which had been forbidden in the past, can be understood in this context. Originally, North Korea had tried to tightly regulate farmers' markets while pursuing its economic reform, but this policy was opposed by citizens when the public sector failed to increase supply. Eventually, with mounting inflation, the authorities gave up their attempts to regulate farmers' markets and authorized the sale of collectively produced goods, thus allowing the farmers' markets to provide daily necessities that the public sector could not supply. This change in policy meant that the light industry enterprises that produced daily necessities were given some freedom in distributing their products. In effect, North Korea had eased regulations not only for farmers' markets on the demand side of the economy, but also for factories and enterprises on the supply side.

The efforts to ease restrictions and to increase production in the light industry sector appear to have been successful. Table 4-4 summarizes North Korean reports on light industry investment in 2002, showing that technological improvement in shoe factories and yarn factories received the most attention, while expanded operation and production capacity were reported at the Pyongyang Daily Necessities Factory, the Pyongyang Clothing Factory, and the Daedong River Beer Factory. Overall, production seems to have risen slightly. According to the Bank of Korea's *Estimate of North Korean GDP in 2000*, the efforts to spur production of daily necessities after the July 1 Economic Reform have helped North Korea's light industry—unlike its heavy industry, which is experiencing negative growth—to record a 2.7 percent expansion that is based on increased production of food products, clothing, paper, and wood products.

The efforts to increase light industry production intensified in 2003. North Korea emphasized the “modernization of light industry” in its 2003 joint statement and is working to increase industrial capacity. Toward this aim, the modernization of light industry factories in Pyongyang and Kaesong has been proposed.

Although North Korea's light industry production figures for 2003 are not available, judging from the number of enterprises that fulfilled their plans for the first half,⁷ one can guess that it continues to grow in 2003.

Table 4-4. Light Industry Investment and Technology Projects in 2002

Category	Factory/Enterprise	Investment, Technology Project
Necessities	Pyongyang Daily Necessities Factory	Operation of toothbrush factory
	Daedong River Beer Factory	Completion and operation of factory with yearly production capacity of 70,000 kl
Textiles, Apparel	Pyongyang Clothing Factory	Completion, beginning of operation
	Pyongyang Yarn Factory	Technological improvement and modernization
	Kangso Yarn Factory	Technological improvement and modernization
Footwear	Pyongyang Vinyl Chloride Factory	Technological improvement and modernization
	Sariwon Footwear Factory	Technological improvement and modernization of facilities
	Haeju Dress Shoe Factory	(As above)
	Kaesong Footwear Factory	(As above)
	Haesan Footwear Factory	(As above)
	Sunchon Shoe Factory	(As above)
	Pyongyang Footwear Factory	(As above)
	Kangso Footwear Factory	(As above)
	Kanggye Footwear Factory	(As above)
	Sinuiju Footwear Factory	(As above)

Source: Ministry of Unification, *Weekly North Korean Trends*, no. 650.

Note: Derived from North Korean reports.

A glimpse of North Korea's light industry policy can be seen from the country's reports on light industry production for August and September 2003. In *Weekly North Korean Trends*, no. 661, North Korea's reports on the light industry sector for August and September 2003⁸ describe a policy with several aspects. First, factories are being built quickly with military labor and funds from People's

⁷ Light industry factories that achieved their targets for the first half include the September Textile Factory, Sinuiju Shoe Factory, Sariwon Textile Factory, Sariwon Patriot Plastic Toiletries Factory, Sariwon Honor Soldier Sewing Factory, and Bakcheon Youngbin Silk Factories, plus the Pyongyang, Hamhung, and Kangso Silk Mills. See Ministry of Unification, *Weekly North Korean Trends*, no. 661.

⁸ North Korean reports on light industry during this period consist of the following:

Source (date)	Content
<i>Rodong Sinmun</i> (1 September)	Completion of Pyongyang Gum Factory
<i>Rodong Sinmun</i> (2 September)	Operation of Kangso Mineral Water Production Factory
<i>Rodong Sinmun</i> (14 September)	Output expansion of 120.5% by local industry factories in all regions in first stage of consumer goods production

Subsistence Bonds. Second, great efforts are being made to produce consumer goods such as gum, mineral water, and cosmetics, in addition to essentials such as soap and soybean paste. Third, both competition between factories and projects jointly managed and owned with foreign parties are being encouraged to boost production and improve quality. Fourth, raw materials are being supplied according to performance evaluations, and greater attention is being paid to the comments of buyers.

North Korea also seems interested in exporting its light industry products. It is building more factories that produce not only domestic necessities like soy sauce and soybean paste, but also products for export. It is strengthening cooperation in light industry with countries such as China and Russia.⁹ North Korea is also pursuing joint management and joint ventures with East Asian and European countries to increase investment in the light industry sector.¹⁰

2. Energy

Together with the food shortage, the energy shortage was the main cause of North Korea's economic crisis in the 1990s. The energy crisis is worsening with growing international pressure surrounding North Korea's nuclear ambitions and the halt of crude oil shipments from KEDO.^{11,12}

Korean Central Broadcasting

(15 September)

Choson Joongang (19 September)

Choson Sinbo (23 September)

Final stage of container production process at the Sinuiju Cosmetics Factory

Operation of Janghoon Food Product Joint Enterprise

Quality competition between Pyongyang Cosmetics Factory and Sinuiju Cosmetics Factory

Source: Ministry of Unification, *Weekly North Korean Trends*, no. 661.

⁹ On 8 July 2003, North Korea signed a protocol on light industry cooperation with Russia's maritime provinces. The protocol seems intended to expand bilateral trade and promote cooperative projects in light industry. Ministry of Unification, *Weekly North Korean Trends*, no. 651.

¹⁰ The *Yonhap News* quoted the March issue of *Choson* as stating that North Korea plans to actively promote joint light industry ventures with capitalist countries. Man Il-hong, North Korea's director of the Light Industry Committee, revealed in an interview in the March issue of *Choson* that "the Light Industry Committee plans to pursue extensive cooperative ventures with many countries, including those of East Asia and Europe, and careful preparation is being made to realize this plan ... by improving the quality of the light industry sector to the highest level and by vastly increasing the variety of exported products, we intend to pursue many joint operation[s] and joint ventures," and "we are actively pursuing joint operations and ventures with other countries in the clothing industry." See *Yonhap News* (9 March 2003).

¹¹ On 20 January 2003, Kim Jong-il told a Russian visitor to Pyongyang that "North Korea's economy is worsening, and especially lacks crude oil," which reveals that the crude oil supply shortage is hurting the North Korean economy. KDI, *North Korean Economic Review* (February 2003), 85.

Suspension of the oil shipments, at a time when North Korea's thermoelectric power plants require more crude oil because of their old age, is worsening the country's energy shortage. Although North Korea's thermoelectric generators are fueled by domestic coal, they need crude oil for ignition. Worn-down generators use more crude oil and their usage has fallen with the halt of crude oil shipments, bringing a decrease in electricity generation. Every month, the Pyongyang Thermoelectric Power Plant used 2,000 to 5,000 tons of crude oil provided by the United States, but after the halt in oil shipments, only six out of fourteen boilers were operating in January 2003, and the electricity generated fell to the lowest level of the generator's capacity.¹³

North Korea's decreased coal production in 2003 also worsened the energy situation. According to estimates by the Bank of Korea, North Korea's coal output in 2002 fell by 5.1 percent from the previous year to 21.9 million tons. That decline, along with the halt in oil shipments, was a key factor in North Korea's lower energy production. In 2002, North Korea's energy output was only 19.04 billion kilowatts (kW), a decrease of 5.5 percent from the previous year.

Table 4-5. Trends in North Korea's Energy Sector

	Unit	1990	2000	2001	2002
Coal Production	million tons	33.15	22.20	23.10	21.90
Energy Generation Capacity	million kWh	7.14	7.55	7.75	7.77
Energy Generated	million kW	2.52	1.936	2.015	1.904
Imported Oil	thousand tons	—	389	692	597

Source: Bank of Korea, *Estimates of North Korean GDP* (various issues).

In response to the deteriorating energy situation, North Korea drafted a "Three-Year Plan for Fuel and Power (2003 to 2005)" in an attempt to resolve the situation. Choi Hong-kyu, director of North Korea's State Planning Committee, stated that the three-year plan "comprehensively envisioned everything down to the smallest details, including how to improve technology at power plants to solve the fuel and power issue, the amount of coal needed to produce electricity, and the facilities needing repair in the machine industry sector." He also stated, "

¹² The *Choson Sinbo* quoted a North Korean official as stating that the record low energy production has led the country into a crisis, and that citizens were shivering from cold in the darkness because they lack electricity. *Choson Sinbo* (16 January 2003).

¹³ Reported in the 18 January 2003 edition of *Choson Sinbo*, quoted in the February 2003 issue of KDI's *North Korean Economic Review* (February 2003) p. 83.

[On the basis of] expected fuel and energy output during the three years, we set goals for the entire economy, such as the amount of metal or chemical fertilizer production.” He added that a second stage would be implemented if the first stage was a success, which, in turn, would involve reform of any irrational aspects of the industrial structure and introduction of new industries with the goal of raising the quality and quantity of North Korea’s products.¹⁴ Considering that North Korea had not drafted an economic plan since the third Seven-Year Plan (1987 to 1993) ended ten years ago, the Three-Year Plan for Fuel and Power” appears to be a replacement for the previous format of economic plan.

To fulfill its Three-Year Plan, North Korea is repairing and modernizing its large-scale mines and power plants to normalize production. It is also expanding construction of smaller mines and power plants.

In the coal industry, the budget for related sectors was raised by 30 percent in 2003 over that for the previous year. Considering that the budgets for light industry and farming were raised 12.4 percent and 21.3 percent, respectively, the importance that North Korea places on the coal sector is apparent. The country is attempting to increase coal production by improving technology and by modernizing existing large-scale mines, while also developing smaller mines. According to North Korean broadcasts, emphasis is being placed on the latter. From January to July 2003, it was reported that North Korea developed 230 new small-scale mines, a three-fold to fourfold increase from the previous year.¹⁵

Mine construction has been especially active in North Korea’s mining areas of South Pyongan Province and South Hwanghae Province. North Korea’s efforts to build new mines seem to be the result of the country’s continuing nuclear crisis and cutoff of crude oil shipments. Lacking any alternative fuel source, North Korea has turned to coal as the only fuel for which it can increase production through its own effort. With the halt of KEDO crude oil shipments in December 2002, the coal produced by large mines was used for ignition at thermoelectric facilities. It seems that the authorities are urging local units and enterprises to independently make up for the lower coal supply.¹⁶ As a result of those efforts, North Korea’s coal production has increased from the previous year’s,¹⁷ and many mines have announced the fulfillment of their first-half production goals.¹⁸

¹⁴ *Choson Sinbo* (8 November 2003).

¹⁵ *Korean Central Broadcasting* (10 August 2003).

¹⁶ Ministry of Unification, *Weekly North Korean Trends*, no. 656.

¹⁷ *Korean Central Broadcasting* reported on 27 August that because of North Korea’s all-out effort to supply fuel to factories and enterprises, coal production through late August had increased by 456,000 tons from the previous year.

North Korea has also concentrated its resources on the power generation sector, investing its revenues from its People's Subsistence Bonds in power generation. It is building large-scale power plants at places like Kumya River (180,000 kWh), Yeseong River (100,000 kWh), and Orangchon (73,000 kWh), in addition to repairing and modernizing existing generators and building small-scale power plants in each district. In the construction of small-scale generators, the focus has shifted from merely building more generators to building relatively larger generators with capacities of 4,000 kWh capable of generating electricity usable by households and factories. For example, *Rodong Sinmun* reported that in 2003, the province of Jagang set a goal of adding approximately 20,000 kWh of generation capacity. To achieve this goal, it is building six relatively large small-scale power plants, including the Euijin and Yonha Power Plants.¹⁹ Other power plants are also being built, including the Daegwan 1 Power Plant, Unbong Power Plant, Nohyun 2 Power Plant, and Wanpoong Power Plant (all in North Pyongan Province), plus the Naepyeong 2 Gunmin Power Plant in Kangwon Province and the Woonchonggang 6 Power Plants in Ryanggang Province.²⁰

C. Problems and Prospects for North Korean Industry

1. Problems

The basic problem of North Korea's industries is the industrial structure itself, which is based on the heavy and chemical industries (such as metals, machinery, and chemicals), as well as the mining and power industries. North Korea has no choice but to work within this industrial structure because it would be impossible to change in the short term. The problem is that the competitiveness of these heavy and chemical industries is extremely low. There is little possibility of mobilizing resources to make them more competitive. Despite recent signs of normalized production in some areas, the uncompetitive heavy and chemical industries, as well as the undeveloped light industries, are making it difficult for the North Korean economy to find a viable growth engine.

¹⁸ The number of factories and enterprises in the energy sector that reached their goals for the first half rose from eleven in the previous year to twenty, and most of those were in the mining sector, such as the 2.8 Coal Mine and the Cheongnam Coal Mine (Ministry of Unification, *Weekly North Korean Trends*, no. 661).

¹⁹ *Yonhap News* (10 February 2003).

²⁰ *Korean Central Broadcasting* (26 August and 3 September 2003), quoted in Ministry of Unification, *Weekly North Korean Trends*, no. 659.

Even more seriously, those problems are intertwined. It is not just a certain industry or sector that has fallen behind, but the entire industrial cycle is riddled with problems. The problems include the dual structure of military and civilian industries, the relationship between heavy and light industries, and the relationship between upstream and downstream industries. For example, because of a shortage of raw and subsidiary materials, the textile industry is failing to achieve regular production. In addition, the chemical fiber factories that require vast amounts of electricity to inefficiently produce vinylon have lowered their utilization rates because of the stagnant coal sector and the resulting energy shortage. Meanwhile, the mining sector, which is suffering from worsened mining conditions and a lack of equipment and materials, is unlikely to see a recovery in the short term. In addition, the food and necessities shortage is making it difficult to recruit labor in the mining sector and has caused production to fall even lower. Because the economy's problems are interconnected in this way, it is difficult to improve the situation simply by focusing human resources on a certain sector. Even if the energy situation improved, the raw materials shortage would continue in the textile industry if the synthetic fiber factories fail to reform their inefficient production system. Unfortunately, the production system of those factories cannot be reformed in a short period of time.

There appear to be no sweeping solutions to those comprehensive problems. Extensive modernization or repair of industrial facilities is impossible, while it is also unfeasible to overhaul the inefficient technology system. Although the changes may be possible with large-scale external aid, such aid would be granted only if North Korea adopted a policy of dramatic opening and economic reform, which is unlikely because it would threaten the regime's stability.

North Korea is also unlikely to de-emphasize heavy industry. Heavy industry is the country's leading sector and occupies a crucial role in the industrial cycle, and it will continue to receive a certain level of investment. In addition, heavy industries are closely related to military production, and a shift away from this sector would have high political costs. Therefore, the biggest constraint on North Korea's industrial policy is that the comprehensive problems have to be approached in a piecemeal fashion.

With the increasing international pressure from the nuclear crisis and the resulting suspension of external aid, North Korea's applicable resources have further diminished, which, in turn, has worsened the raw material and energy shortages that are crippling the country's industry. Although North Korea is pursuing its Three-Year Plan for Fuel and Power and is attempting to independently solve its energy shortage, the country will not be able to find a basic solution to its industrial problems by relying on only domestic resources, as shown by the effect that the KEDO crude oil suspension has had on North Korea's

energy production.

2. Prospects

Considering that North Korea's problem can be approached only in a step-by-step manner, the industrial policy of "normalizing production in the economy's leading sectors through technological improvement" and "improving the people's living by expanding light industry production" seems to be a step in the right direction. The recent partial recovery in the economy seems to be connected to this pragmatic policy. Therefore, it is not expected to change in the near future.

However, the fact remains that this policy stance is not a fundamental solution to North Korea's economic problem. Relying only on domestic resources will bring very limited results. If the external conditions that have been aggravated by the nuclear tension become even worse, the recent partial recovery may be undermined, plunging the economy into another crisis.

This point was illustrated by the negative growth in the heavy chemical industry in 2002, which was caused by worsened external conditions despite the efforts to improve technology. The fact that the July 2002 Economic Reform failed to expand supply—leading to inflationary pressures and authorization of farmers' markets to sell collectively made products—also shows the difficulty of achieving real change while relying on only domestic resources.

Although it is understandable that North Korea has created a new economic plan in the form of the Three-Year Plan for Fuel and Power and is attempting to rely on domestic resources to resolve the energy shortage and, in turn, modernize its industrial structure, the likelihood of success does not seem high.

In this respect, 2004 is expected to be a very important year for the North Korean economy. The nuclear crisis needs to be resolved—or at least eased—for the country to expect any external aid, which is crucial for an industrial recovery. Considering that the nuclear issue is restricting inter-Korean economic cooperation—the only current source of aid—the outcome of the nuclear issue in 2004 will affect North Korea's industry for years to come. On the one hand, if a positive solution is found to the nuclear crisis, the mood for inter-Korean economic cooperation will improve dramatically, allowing the four agreements on South–North economic cooperation to come into effect and promoting the Kaesong Industrial Complex project. Economic cooperation (especially the realization of the Kaesong project) would further stimulate North Korea's external opening policy. The foreign currency attracted by this policy would make "normalizing production in the economy's leading sectors through technological progress" into a real possibility. North Korea's efforts to prepare its light-industry sector for export would also benefit. On the other hand, if the nuclear

issue is not peacefully resolved, the resulting aggravation of the energy and raw material shortage may push North Korea's industry into a permanent collapse.

References

In Korean

- Bank of Korea. *The Result of North Korean GDP Estimation*. Seoul: Bank of Korea. Various issues.
- Choi Shin-lim and Lee Seok-ki. 2002. *Approaches to Inter-Korean Economic Cooperation*. Seoul: KIET.
- Choson Sinbo*. Various issues.
- KDI. *North Korea Economic Review*. Various issues. Seoul: Korea Development Institute.
- KDI. *North Korean Economic Development Strategies*. 2003. Seoul.
- Korea Development Bank. 2000. *The Industry of North Korea*, Seoul: Korea Development Bank.
- Kyungnam University Graduate School of North Korean Studies. 2003. *North Korea's Economic Reforms*. Report on the Second 2003 Workshop for North Korean Specialists. Seoul: Kyungnam University Press.
- Lee Sang-jick, Choi Shin-lim, Lee Seok-ki. 1998. *North Korea's Industry and Mining Sector Handbook*. Seoul: KIET.
- Ministry of Unification. 2002. *2002 Comprehensive Evaluation of North Korean Economy*. Seoul: Ministry of Unification.
- _____. *Weekly North Korean Trends*. Various issues.
- Nam Sung-wook. *North Korea's IT Industry Development Policy and Building a Strong Country*. Seoul: Hanwool Publication, 2002.
- Rodong Sinmun*. Various issues.
- Yang Moon-soo. 2001. *Recent Trends and Issues in North Korea's Economy*. Seoul: LG Economic Research Institute.
- Yonhap News*. Various issues.

Chapter 5

The Agricultural Sector

A. Overall Agriculture in North Korea

The economic recovery that began in 1999 continued for the fourth year in a row with an estimated gross domestic product (GDP) growth rate of 1.2 percent in 2002, following a growth rate of 3.7 percent the previous year. The bulk of this growth during the past two years has been the result of improved production in the agriculture sector.

According to the Bank of Korea, agriculture, including forestry and fisheries, contributed about 30 percent of GDP in 2002. The performance of this sector has been erratic, with negative growth rates in 1997 and in 2000. Over the past several years, natural disasters—such as droughts, floods, tidal surges, hail storms, typhoons, and extremely cold winters—have affected agriculture in varying degrees of severity, with consequent adverse effects on food production. Also, the precarious foreign exchange situation has not allowed significant commercial imports of much-needed agricultural inputs, such as fertilizers, pesticides, plastic sheeting, spare parts for machinery, tires for tractors and trucks, and fuel. Over the years domestic production of fertilizer has declined to a level of about 10 percent of the total requirement, increasing reliance on fertilizer donations.

In the 1980s, yields of the main crop (paddy) were approximately seven or eight tons per hectare, but now they have declined by about half because of a lack of agricultural inputs. To increase total food production in the country, North Korea is using every possible piece of cultivable land, but cultivation of marginal lands has unintended consequences of soil erosion and further reduction in overall land productivity. The total food gap in the past eight years has ranged from 0.97 million tons in 2002–2003 to 2.2 million tons in 2000–2001. Thus,

improvement in productivity is desperately needed.

About 50 percent of tractors are not operational because of a shortage of spare parts, tires, and fuel. The obsolete and decaying farm machinery and irrigation facilities need repair or systematic replacing. Irrigation facilities require streamlining, preferably linked to large gravity-fed networks. More fertilizer alone is not likely to provide sustainable enhancement in agricultural productivity. Other innovative, environmentally friendly agricultural techniques (such as improving soil fertility through green manure, using alternatives to chemical fertilizer, rotating crops, integrating pest management, and instituting policy reforms) need to be put into practice. Double-cropping of wheat and barley after rice and maize (cereal after cereal) on already exhausted soils is unsustainable. Introduction of leguminous crops in the crop rotation is vital. Thus, increased assistance from the international community is needed to rehabilitate industries, infrastructure, and the agricultural sector.

Agricultural commodities were affected by the government's changes in wages, by the prices, and by the currency exchange rate policies from previously highly subsidized or artificially low levels in July 2002. Accordingly, rice and maize prices in the public distribution centers are now 46 won and 24 won per kilogram (kg), respectively, compared to about 0.9 and 0.7 won/kg before July 2002. Farm gate prices after the adjustment are 29 won/kg for paddy (or 42 won for rice) and 20 won/kg for maize. Prices of various inputs such as seed, fertilizer, pesticides, fuel, and electricity have gone up but generally seem to have resulted in better overall economic incentives for farmers. Cash crops such as tobacco and cotton provide relatively greater profitability than the usual staple crops; however, their cultivation is restricted until the targets for staple cereals are met.

There has been an important market reform since June 2003, of officially recognizing farmers' markets for the first time. In addition to vegetables, potatoes, and green maize from kitchen gardens, a variety of consumer goods is sold in those markets. Farmers, however, do not have direct access to the markets to sell staple food commodities (above their grain allocation for home consumption). Instead, farmers must sell their staple food crops to the government procurement agency. If allowed, farmers' markets throughout the country can play an important role in this new incentive-based system. It is recommended that in addition to providing urgently needed food aid, the government and the international community should enter a policy dialogue to set an enabling framework that will mobilize the economic, financial, and other assistance needed to promote sustainable food production and overall food security.

B. Structure of Agricultural Production in North Korea

Because North Korea maintains a socialist command economy, low material incentives to farmers brought about by a state monopoly of agricultural products and the cooperative ownership of farms led to a decrease in farming productivity and resulted in the severe food shortage of the mid-1990s, which was compounded by inadequate supplies of agricultural inputs and the mismanagement of North Korean agriculture.

North Korea's agriculture development has come to an impasse since the late 1980s, and the food situation seriously worsened after 1993. In particular, famine claimed many lives in North Korea during the mid-1990s. Those factors clearly show that North Korea's food production ability has reached its limit. Along with the maintenance of the collective farm system, the declining economic situation contributed to the food shortage of the mid-1990s. North Korea's economic recession resulted in a suspension of material supplies, including fuel, basic fertilizers, pesticides, farming machinery, and seeds, all of which are necessary for grain production.

Since the inception of the socialist regime, resolving the food shortage has been on top of North Korea's national agenda. As the political slogan "Rice Is Communism" implies, mitigating the food problem means more than just developing agriculture; it is the key to a successful socialist nation. Consequently, North Korea's agricultural policy and its economic development plan have focused on increasing food production for the past five decades. Sixty years of annual agricultural policy-related documents show that North Korea has been mainly concerned with increasing grain production. Notably, North Korea regarded the expansion of arable land and the development of agricultural technology as important to increasing the food supply, resulting in continuous efforts to expand farmland and to improve irrigation systems.

The seriousness of the food shortage worsened in the mid-1990s after the failure of the third Seven-Year Plan, which ended in 1993. With such a dire situation, the previous management system was changed to the "new subgroup management system," fashioned after the Chinese model.¹ Although North Korea claims that the new subgroup management system dramatically increased the unit production of food, the actual effect is questionable (without an increased supply of farming materials).

North Korea has made various attempts to increase the amount of total pro-

¹ Each subgroup consisted of five to eight members of one family and relatives, with lower production goals and the right to dispose of surplus production.

duction of food in the past, but it failed to do so because of lack of investment in the agricultural sector.

The characteristics of North Korea's agricultural structure can be seen in terms of organization and technology used. With respect to the agricultural production structure, North Korea's farmland is about 2.0 million *jeongbo* (1 *jeongbo* = 99 acres), or 17-18 percent of 12.25 million hectares (the total land size of the country). Of this total, 1.4 million *jeongbo* are used for crop cultivation; 0.3 million *jeongbo*, for vegetable crops; 0.16 million *jeongbo*, for fruit orchards; and a considerable area allocated to various other food and industrial crops such as mulberry, ginseng, and tobacco. There is very limited scope for expanding cultivable areas. About 200,000 hectares consist of orchards, mulberry fields, and some cornfields on terraced lands with a sixteen-degree slope, producing relatively less production. The average altitude of North Korean farmland is relatively higher than that of South Korea. The climate conditions are somewhat unfavorable for crop production because 52 percent of land in North Korea is located at an altitude of more than 400 meters, and the average temperature is quite low.

With respect to the management of cooperative farms, average farm size is 500 *jeongbo* and consists of 300 farming houses. There are five to ten workshops in a cooperative farm, and each workshop has 50 to 100 farmers. The workshops are broken into three or four subgroups. The recent implementation of the "subgroup contract system" is considered an early stage of reform in the North Korean agricultural sector. Its goal is to give incentives to individual farmers at the subgroup level (*buncho*) by allowing them to take care of the surplus production. The subgroup contract system is a modified form of the former subgroup management system. Each subgroup used to consist of twenty to twenty-five farmers; currently, each includes five to seven farmers. The new policy reduced the size of the working unit to improve efficiency and productivity in the agricultural unit.

The material incentives in the subgroup contract system are different from the past in that the surplus production exceeding the target set by the government would be given to the subgroups to use at their disposal. The 2003 production target, for example, is decided by averaging the harvest from the past three years (2000-2002) of each subgroup and the harvest of the ten years before 2000. This movement is viewed as an inevitable policy shift in order to increase agricultural production by reinforcing the subgroup contract system and, thus, to improve the motivation of farmers.

Nevertheless, the question is whether the subgroup contract system will be successful. At first glance, it looks as if one is handing the management authority from the state to individuals, but actually it is only reducing the number of

farmers in the working unit. The result is extremely uncertain because the economic difficulties continue and because there is a limited supply of the fertilizers and pesticides necessary for production. Such passive reform in the agricultural sector would only temporarily subside farmers' complaints, and it is doubtful whether it will be efficient in the long run.

Meanwhile, North Korea's agricultural infrastructure is considerably outdated. Agricultural collectivization in North Korea began after the Korean War. The agricultural facilities grew as the collective large-scale farming system started. However, agricultural facilities such as drainage facilities built in the early 1960s are almost worn out after thirty years; moreover, it appears that all basic facilities of granaries in the west coast area were ruined by flooding in the mid-1990s.

To resolve food shortages, farmers have long been secretly cultivating unauthorized farmland on hilllocks called "patch fields." But damaged forests caused erosion, and many hilllock farms were lost to floods or landslides.

Although North Korea enjoyed some advantages of large-scale farming through the introduction of the collective farm system, large-scale farming in a socialist society has created more negative than positive side effects. Farming machinery appropriate for North Korea's geographical features is not being used, and it is difficult to use the labor force. Therefore, in the busy farming season, students and soldiers are mobilized to help farming.

In the case of farming resources, most farmland in North Korea is either polluted or acidified because of excessive use of fertilizers and pesticides. That excessive use resulted in soil pollution, and consequently agricultural productivity fell extremely low. It has been announced that, in the 1980s, the amount of chemical fertilizer being used was 2,000 kg per *jaongbo*. That figure is doubtful when compared to South Korea's 1995 fertilizer use, 434 kg per *jaongbo*. Obviously, North Korea's fertilizer use is exaggerated. Typical fertilizer application rates this year in the Cereal Bowl provinces range from 380 to 500 kg of ammonium sulfite per hectare of paddy (about 165 to 215 kg per hectare of urea, the most commonly used product), with slightly lower rates for maize.

In 2003, North Korea used 244,512 nutrient tons of fertilizer, compared to only 189,000 tons the previous year. Most fertilizer was provided as humanitarian assistance by the Republic of Korea, the European Union (EU), the Food and Agriculture Organization (FAO) of the United Nations, and various nongovernmental organizations (NGOs). Just over 32,000 nutrient tons were produced in the country, and 37,706 nutrient tons were imported commercially. Of the total used, 68 percent was nitrogen, mostly in the form of urea; 15.5 percent was phosphorus; and 16.5 percent was potassium. It is reported that all farms have higher fertilizer rates this year than for the past several years—approximately 10 percent higher than in 2002. Farmers cited this factor as the main reason for

increased yields. The supply of fertilizers does not meet demand because of the falling rate of manufacturing operations caused by the declining economy. Although the operating rate of fertilizer manufacturers has increased somewhat, fertilizer production amounts to only 30 percent of the total need. The energy shortage is partially responsible for the limited supply of fertilizer. Although organic fertilizers are an alternative to chemical ones, North Korea could not produce enough organic fertilizers such as limestone and compost to meet demands. Deforestation and the discontinuance of livestock husbandry also contributed to the shortage of organic fertilizers. In some areas, intensive farming and frequent floods lowered the fertility of the soil.

The food shortage was compounded this past year by a report of an outbreak of water weevils. The pest was reported to be present over an area of about 400,000 hectares and to have affected the yield in 150,000 hectares in North Hwanghae, Pyongyang-si, and Nanpo Provinces.

Estimates state that farm power usage was quite high until the 1980s. Of the country's 64,225 tractors, 57 percent are reported to be operational as a result of enhanced availability of fuel, tires, and spare parts, compared to 55 percent last year. However, most functioning tractors are extremely old. It appears that about half of the land preparation in the Cereal Bowl provinces is still done using draft cattle, although some farms report that as much as 70 percent of their cultivation is carried out by tractors. Farms also report a slight improvement in power supply this year, which is especially important for pumping stations and threshing.

Most of North Korea's irrigation systems depend on electrically powered pumping stations, although some irrigation is by gravity feed. This year, the power supply improved so there were fewer stoppages. Levels in the country's reservoirs have been satisfactory. By September 2003, they were at 68 percent capacity, which is significantly higher than last year. The country's long-term irrigation situation continues to improve. The 148-kilometer South Pyongan Waterway in South Pyongan Province was recently completed, and the construction of two similar waterways (North Pyongan and North Hwanghae-Kangwon) has started. These are all gravity-based systems that will be linked to the existing network, thus reducing the need for a pumping station.

Although North Korea's agricultural technology has been close to the average level of that in developing regions, the so-called *juche* farming methods have hindered effectiveness in farming. Geographically, North Korea is considered to have a short growing season of rice paddies, and using rice-sowing methods has negatively affected the maturity of rice while decreasing rice production.

To overcome such climatic disadvantages, North Korea has developed several methods of rice farming, which enables the northern part of the Korean peninsula to start rice seedling almost a month earlier than the southern part, thus

avoiding harvest during the frost season. North Korea has also tried to overcome disadvantageous weather conditions through improving varieties of corn and other crops. Nonetheless, since the late 1980s, grain production has continued to decrease because of a shortage of material inputs, as well as exhaustion and acidification of soil.

C. Current Status, Issue of Grain Production, and Its Prospects

The current status of grain production in North Korea has received much attention from the international community. According to a North Korean announcement, there were two million *jaengbo* of arable land in 2003. In actuality, there seems to be only 1.8 million *jaengbo* available. Of the 1.8 million *jaengbo*, food cultivation uses about 1.46 million *jaengbo*: paddy fields, 593,000 *jaengbo*; cornfields, 495,000 *jaengbo*; potatoes, 187,000 *jaengbo*; barley and wheat, which are planted twice a year, 103,000 *jaengbo*; and other crops, 60,000 *jaengbo*.

Paddy is now the most important crop in North Korea in terms of area used for both cultivation and production. In 2003, the area used for paddy farming was reported as 593,000 hectares, an increase of 1.8 percent over the previous year. In periods of severe water shortages, the paddy area may be reduced and subsequently planted with soya, or more drought-resistant crops such as sorghum and millet. This year, however, good utilization of this expanded area was helped by the generally favorable rainfall and the improved electricity supply for irrigation pumping stations.

Maize is more universally distributed than paddy. Until 1998, the area under maize amounted to some 630,000 hectares. Since then, however, the government has set lower maize planting targets in order to avoid expansion into lands with low potential. On such marginal lands, less water-demanding cereal crops and pulses have replaced maize. On lands with higher potential, vegetables and main season potatoes have entered the crop rotations. This year's area of 494,996 hectares shows a very slight reduction when compared to last year's area of 496,390 hectares.

Potatoes are grown as a spring (double) crop in the Cereals Bowl region and as a summer crop in the cooler northern highlands (Jagang, Ryanggang), where a shorter growing season is experienced. As a double crop, potatoes are sown in March–April and harvested in June, while as a main crop they are sown in May–June and harvested in August–September. The maximum cultivable area of spring and main season crops under present conditions is about 190,000 hectares. The areas under spring and main season potatoes this year were 99,000 hectares and 89,000 hectares, respectively. The area under spring potatoes in 2004 is ex-

pected to be similar to that of spring 2003.

Winter wheat and spring barley are produced in all provinces except Ryanggang and North Hamgyong. The double cropping is considered, under present conditions, to be an effective strategy for enhancing food production. Efforts to increase the use of double cropping have led to an expansion of the double-cropped area under winter wheat, spring barley, and spring potatoes from 38,000 hectares in 1997 to more than 211,000 hectares in 2002/2003 (an increase of almost 530 percent). A further 19 percent expansion of the area under winter wheat from 57,700 hectares to 68,500 hectares is planned for 2003/2004, while the area under spring barley in 2004 is expected to remain close to that of 2003.

Other important crops produced in North Korea include summer wheat and barley, sorghum, millet, soybean, buckwheat, vegetables, and fruit. The area under minor cereals and grains such as sorghum, various types of millet, and summer wheat and barley in mountainous areas has increased this year from 54,000 hectares to 60,000 hectares, reversing last year's downward trend. The area under soybean, which is generally planted along the edges of paddy fields or intercropped with maize and/or sorghum, appears to be increasing.

North Korea's crop production was estimated to be about 4-4.5 million tons annually before the end of the 1980s, but the average production figures have gradually headed downward since 1990. The World Food Program (WFP) estimates that North Korea's crop production in the 2003-2004 marketing year (November and October) will be 4.156 million tons, the best harvest in the past nine years, and 4.7 percent larger than last year's revised estimate.

The main factors behind this continued recovery include favorable weather conditions, especially at the beginning of the season; a relatively low incidence of crop pests and diseases; an increased application of fertilizer, which is provided through international assistance; improved irrigation facilities in the main Cereal Bowl region of the country owing to completion of the Kaechon-Lake Taeseong waterway funded by the Organization of Petroleum Exporting Countries; an improved availability of electricity for irrigation pumping stations; and an enhanced mechanization resulting from greater availability of fuel and spare parts.

How much food is demanded in North Korea? North Korea's population is almost half the size of South Korea's, so if North Korea's economic status is similar to South Korea's, its crop consumption should amount to 10 million tons. Taking into account the fact that North Korea's current economic situation is equivalent to South Korea's economic status during the 1960s, food consumption in North Korea can be estimated to be about 6-6.5 million tons. As Table 5-1 shows, the difference between production and consumption (the amount of

food shortage) is about 2 million tons annually. If international food aid stops, the food shortage is sure to get worse.

Table 5-1. Yearly Status of North Korea's Food Supply

(unit: 1,000 tons)

Year	Total Consumption (A)	Total Production (B)	Import (C)	Shortage (A – (B + C))	Self-Sufficient	
					(B + C)/A (%)	B/A (%)
1991/1992	5,762	4,427	1,290	–45	99.2	76.8
1992/1993	5,894	3,898	830	–1,166	80.2	67.7
1993/1994	6,065	2,923	1,093	–2,049	66.2	48.2
1994/1995	6,156	3,768	490	–1,898	69.2	61.2
1995/1996	6,244	2,606	1,330	–2,288	63.2	41.9
	(5,988)	(4,077)	—	(Δ581)	(90.3)	(68.1)
1996/1997	6,061–6,226	2,447–2,817	1,160	–2,454	59.5	40.4
	(5,359)	(2,995)	—	(Δ1,204)	(77.5)	(55.9)
1997/1998	6,188	2,559	1,460	–2,169	64.9	41.4
	(4,614)	(2,663)	—	(491)	(89.4)	(57.7)
1998/1999	6,311	3,138	1,140	–2,033	7.86	49.7
	(4,835)	(3,481)	—	(214)	(95.6)	(72.0)
1999/2000	6,569	3,406	786	–2,377	3.86	51.8
	(4,751)	(3,420)	—	(545)	(88.5)	(72.0)
2000/2001	6,290	2,573	1,300	–2,417	61.6	40.9
	(4,785)	(2,920)	—	(565)	(88.2)	(61.0)
2001/2002	6,290	3,500	919	–1,871	70.3	55.6
	(4,957)	(3,656)	—	(382)	(92.3)	(73.8)
2002/2003	6,300	3,500	400	Δ2,400	61.9	55.6
	(4,921)	(3,840)	—	(Δ681)	(86.2)	(78.0)
2003/2004	6,300	3,700	540	Δ2,060	67.3	58.7
	(5,100)	(4,156)	—	(Δ404)	(92.1)	(81.5)

Source: Kim Woon-keun (2003).

Notes: 1. Figures in parentheses are FAO/WFP estimates.

2. Total production includes previous year's stocks.

3. Imports include North Korea's commercial imports and food assistance from international communities.

4. Although commercial imports are realized only when North Korea has sufficient purchasing power that is based on economic growth, in reality most of North Korea's imports have been food assistance from international communities.

How will the food production during the 2003–2004 agricultural years turn out (from 1 November 2003 to the harvest period of October 2004)? It seems to

be below the projection made by the WFP in October 2003, which was 4,156 million tons. Currently, the best approximation for 2003 is expected to be about 3.7 million tons. This figure reflects favorable weather conditions and an increased application of fertilizer provided through international assistance. Without food and fertilizer aid from South Korea and the international community, food production of the coming harvest year is expected to decrease. The food shortage in 2004 is expected to be around 2 million tons, excluding annual international food aid of about 500,000 tons of crops. Those figures are based on the assumption that North Korea's daily food consumption per person is about 568 grams (2,390 kilocalories) a day, which is based on South Korea's consumption of 207.3 kg per person per year in 1975. North Korea's food consumption per person as determined by FAO/WFP is less than the figure above. When this figure is converted, the annual crop consumption per person is about 150–160 kg.

North Korea's current food shortage is a structural problem caused by shortcomings of the collective farm system. Unless the problems are resolved, the food shortage will only worsen. Recently, North Korea tried cultivating double crops each year and planting spring barley and spring wheat extensively to resolve the food shortage. Through the changes from the July 1 Economic Reform of 2002 and development of the Sinuiju Special Economic Zone, North Korea is expected to influence reform measures in the agricultural sector in order to end the food crisis. The initial agricultural reform will probably take place partly in specific regions. In other words, it will partly apply the Chinese model of agricultural reform in the remote areas of the mountains or to specifically designated regions in North Korea. After some experimental periods, this model may be extended throughout North Korea.

The success of North Korea's agricultural reform measures is not possible if state ownership of land and government intervention in farm management continues. Thus, if one is to achieve expected results, the rearrangement of the ownership structure of the agricultural sector naturally becomes the primary objective of reform. Along with internal reform, North Korea needs to request food aid and technical cooperation in rehabilitating its agricultural sector from South Korea, the United States, Japan, China, and EU nations.

Because North Korea has difficulties in resolving the food and economic crisis on its own, various projects are currently being developed and have been launched by international organizations and NGOs, such as IFAD, the United Nations Development Programme (UNDP), and FAO, to improve North Korea's agricultural production. Although the projects are region-specific, they have not yet been very successful. The problems with North Korea's agriculture, especially the food shortage, should be solved gradually and with a long-term focus.

Inter-Korean cooperation in the agricultural sector is necessary to increase food production and efficiency.

D. Current Situation and Issues of the Agricultural Products Marketing System

In North Korea, how are production, distribution, and circulation of products managed? Production is allocated to individual cooperative farms according to their size and type of crops. The production allocation of each farm used to be controlled by the central government, but recently, unverified reports state that farms currently decide their own production and priorities.

With regard to agricultural production, individual farmers' performances are assessed and reported at the general workshop meeting of the cooperative farm by month and quarter. The farm management committee adds the number of working days in one year and calculates the amount of product distribution. Production reports and statistics of settlement of work are submitted to the county's (*gun*) farm management committee and are reviewed closely by the members of the committee for approval.

The allocation of products for each farmer is the sum of total yield and cash earned, deducting costs, divided by the total number of working days of all farmers. This number is multiplied by the number of working days of each individual farm member. The deductions allowed are costs of purchasing farming equipment, fuel, fertilizers, farm equipment leases, seeds, animal feed, and social-cultural expenses. However, such allocations are a theoretical calculation, and the real amount of allocation is believed to be much smaller. That is to say, any production in excess of the amount of daily necessary food is sold to the government. At a time such as the recent years when the food deficit is exacerbated by the shortage of fertilizers, the amount of allocation would not meet the farmer's expectation. Because the government has priority in purchasing products, the real amount of food allocated to farmers would be far smaller than the actual efforts made by farmers.

North Korea argues that its distribution management system of agricultural products not only delivers agricultural products to consumers but also diminishes the gap between urban and rural areas through trading agricultural equipment and agricultural products. This argument, however, has a political intention to connect urban and rural people in terms of ideology and culture.

Collective farms are in charge of all economic activities of farmers: production, distribution, and consumption are all executed by a single plan. The production goal is set annually and, if the quota has not been met, the farmers then make

false reports to the managing authority. In North Korea, there seems to be a significant difference between the amount of actual inventory and the amount reported to the central government.

The system of collective farm management has been changed from a single to a dual system. The central planning authority determines the demand and supply of major crops, which are then executed passively by subordinate agencies at the county level or below. It means that the collective farm management committee determines the demand and supply of major autumn crops in consultation with the Department of Commerce of the County People's Committee. In a county, each collective farm determines the amount of product allocation after consultation with other collective farms in the county. The Department of Commerce checks the excess and deficiency of vegetables of nearby counties and deals with the excess and deficiency by controlling the demand and supply in advance at the planning stage.

Counties are supposed to meet their own demand for spring vegetables and for condiments such as hot pepper, garlic, and onion. Once the County People's Committee comprehends the total quantities demanded, the committee makes a supply contract with the local Village (里) Farm Management Committees, after consultation with the County Cooperative Farm Management Committee and collective farms executing the contract. When the supply capacity of collective farms exceeds the demand of the County People's Committee, the surplus can be sold through the County People's Committee. The County People's Committee sells products from collective farms to grocery stores of other counties, and actual consumers, such as enterprises and farms, can buy products of which they are short.

Collective farmers can distribute products other than major crops and autumn vegetables through farmers' markets and grocery stores in each county. In particular, the surplus vegetables from kitchen gardens are traded mostly at farmers' markets. The shortage of major crops such as rice and corn surfaced as a critical problem caused by decreased production since the mid-1980s, thus weakening farmers' markets. Because most arable land was used for corn cultivation, other crops and vegetables that were not deemed essential were not produced. Consequently, the absolute lack of subsidiary foods, such as meat, vegetables, and fruits, further raised the demand for major crops.

Recently, North Korea's food supply situation has improved as food aid from the international community has increased and as fertilizer supply has risen. Nevertheless, the food supply reaches only specific regions and certain classes, so smaller cities and lower classes that actually need food are suffering from a food shortage. The economic measures of July 2002, realistic price readjustment, and wage increases have proven more beneficial to farmers than to nonfarmers.

This benefit is because the government's purchasing prices for agricultural goods have increased by hundreds of times and because farmers can sell products from their private gardens at a high price. Such measures can stimulate agricultural production, and more crops may be produced than before. Nonfarmers may not be able to purchase food even if they can afford the price since farmers often delay selling to force a higher price. Private economic activities are very important to farmers now. Unless the state continues to control prices and the distribution system, inflation will increase drastically. Although state functions have not been tenuous during the last decade because of the serious food shortage, the distribution function will be restored when the food crisis is somewhat resolved.

References

In Korean

- Bang Chan-young. 1995. *The Democratic People's Republic of Korea at the Crossroads*. Seoul: Pakyoung Publications.
- Choi Hak-nam and Cheon Man-soo. 1992. *Survey of North Korea's Agricultural Economy*. Seoul: Yeongil Publications.
- Choi Soo-young. 1996. *Study on North Korea's Agricultural Policy and Food Problem*. Seoul: Korea Institute for National Unification.
- Kim Sung-ho and Kim Woon-keun. 1983. *Evaluation of North Korea's Agricultural Productivity*. Seoul: Korea Rural Economic Institute.
- Kim Woon-keun. 1984. "Estimation on North Korea's Agricultural Production." *North Korea Gazette* 8
- _____. 2003. *The Real Situation of North Korea's Agriculture and Fishery and Differential Structure Analysis in Regional and Social Stratum Unit*. Joint Seminar on Institute for National Agriculture and Fisheries and Korean Peninsula Agro-fishery Policy Research Institute. Seoul: Korean Peninsula Agro-fishery Policy Research Institute.
- Korea National Statistical Office. *Comparison of South and North Korea's Economic and Social Aspects*. Annual issues.
- Korea Rural Economic Institute. *Estimation on Grain Production*. Seoul: Korea Rural Economic Institute. Various issues.
- Social Science Press. 1988. *Historical Experience of Agricultural Problem Solution*. Pyongyang: Social Science Press.

In English

- Herbstadt, Nicholas. 1990. "Population and Labor Force in North Korea: Trends

and Implications." Paper presented at Trends and Prospect of North Korean Economy (International Conference) sponsored by KDI and the *Korea Economic Daily*.

Eugene, C. I., and B. C. Koh. 1982. *Journey to North Korea*. Berkeley: Institute of East Asian Studies, University of California.

FAO. 1992. *Demand Prospects for Rice and Other Food Grains in Selected Asian Countries*. M-66. 103037-5. Rome: FAO.

_____. *Agricultural Production Statistics*. Rome: FAO. Various years.

FAO/WFP. 1995-2003. "Crop and Food Supply Assessment Mission to the Democratic People's Republic of Korea." Special Report. Rome: FAO.

Kim Woon-keun, Lee Hyun-uk, and D. A. Sumner. 1998. "Assessing the Food Situation in North Korea." *Economic Development and Cultural Change* 46, no. 3: 519-36.

Lin, Justin Yifu. 1992. "Rural Reforms and Agricultural Growth in China." *American Economic Review* 82: 34-51.

McMillan, John, John Whalley, and Lijian Zhu. 1989. "The Impact of China's Economic Reforms on Agricultural Productivity Growth." *Journal of Political Economy*. 97: 781-807.

Chapter 6

Social Overhead Capital

A. Current Status of North Korea's SOC

1. Concept and Features of SOC in North Korea

The concept of social overhead capital (SOC) is yet to be specified. Despite the divergent views defining the term “social overhead capital,” there is no objection to the fact that the concept refers to resources that promote higher living standards, facilitate effective use of land, and provide an indispensable foundation for the long-term development of society and the economy. According to the Japanese Association of Civil Engineering, SOC should also contribute to productivity, improvement of living environment, and safe land development. Even though SOC creates an effect of something similar to external economies and even though the benefits of SOC investment are continuous and long term, participation of private bodies is rare mainly because of the public nature of SOC, the immense size of SOC investment, and the long-term investment collecting period. For that reason, SOC has not attracted the private sector. Nonetheless, because of the increased capacity of the private sector, private investments in SOC have gradually increased in recent years.

In North Korea, SOC is defined as a capitalistic idea. In other words, SOC—items such as railroads, roads, harbors, airports, telecommunication, energy, water supply and drainage, and tideland reclamation—is something that monopolistic capitalists invest in. Capitalists need SOC for their own self-serving business activities rather than for the general economy or public welfare, which is why capitalists make SOC investments despite its high investment risk and low profits.

¹ In this respect, North Korea regards SOC as part of the basic construction

involving maintenance or extension of fixed facilities that are either productive or nonproductive. North Korea focuses on industrialization and normalization of basic infrastructure.

Therefore, North Korea treats SOC as a basic necessity involving the improvement, repair, and expansion of fixed facilities that are either productive or nonproductive. North Korea emphasizes centralization, industrialization, and normalization of basic construction and then makes clear the fact that all resources are focused on productive construction in order to guarantee the expansion and reproduction of socialism.²

North Korea has also mentioned that the Comprehensive National Development Plan, which includes basic construction, should not damage arable land, should build cities of appropriate size, and should consider regional development prospects and military needs. The principle of building cities of an appropriate size reflects the legitimate demand of socialist and communist construction. It aims to avoid the disproportionate concentration of industrial production in urban areas, as well as the concentration of population and transportation, which causes development disparity between cities and rural areas.³

Indeed, North Korea views SOC as part of its production activity. SOC is built, maintained, and managed regardless of demand. Therefore, the key problem with North Korea's SOC is that it is building, maintaining, and managing industrial infrastructure on the basis of construction principles with limited investment resources under a planned economy.

2. Current Status of SOC

a. Electricity

Chairman Kim Il-sung stated, "We should give priority to the energy industry because there is no part of the North Korean economy that does not use electricity. ... Either in peacetime or wartime, without electricity, we cannot produce anything."⁴ Likewise, North Korea has recognized the development of the energy industry as the first priority for creating normalized and sustainable production, developing a successful economy, and supporting a technical and cultural revolution. Thus, the objectives of the North Korean energy industry are

¹ See North Korean Academy of Social Science (1985).

² See Bang Wan-joo (1988, 167).

³ See Kim Su-yeon (1992, 30).

⁴ Korea Worker's Party Press (1985) Vol. 22, p. 155.

strengthening the existing electrical facilities so that they are consolidated and are based on modern technology, thereby making energy systems reasonably stable; minimizing the electricity deficit by improving energy management; and, finally, raising the quality of electricity.

As industrial facilities improve technologically, electrical power production in North Korea is becoming increasingly important. Power production equipment is an important factor in determining the technical level of production.⁵ Therefore, North Korea evaluates the energy industry as “the frontline of building socialism” in 2000 and “the most important factor of building [a] socialist economy” in 2001 while also claiming the energy industry should lead economic breakthroughs.⁶

North Korea holds a mass rally for twelve days (starting 6 January) in every city and province to create the 2003 joint editorial and also allow the Cabinet Assembly to meet. Through those kinds of assemblies, North Korea emphasizes raising factory operation rates by maintenance and modernization of the existing electrical facilities.

In 2000, Chairman Kim Jong-il visited the Naepyeong power plant, the Anbyeon Youth Power Plant, and the power plant built by People’s Army Unit 308 for field guidance. In 2001, he visited the Taechon Power Plant and the Beoman Power Plant for field guidance. Most regional authorities placed improvements to the energy industry on their 2003 objective lists:

- Pyongyang: Increase power generation and timely completion of the Pyongyang and East Pyongyang Power Plants.
- Jagang Province: Expand the construction of Kanggye Youth Power Plant, Jangja River Power Plant, Wuiwon Power Plant, and Heungju Youth Power Plant.
- Ryanggang Province: Construct small- and middle-sized power plants.
- Kangwon Province: Complete the power generator for the Anbyeon Second Unit Youth Power Plant and Wonsan Youth Power Plant in a timely manner.
- North Hwanghae Province: Normalize small- and middle-sized power generators and the expansion of the construction of Yeseong River Power Plant.
- North Hamgyong Province: Complete the second phase of construction of Orangchon River Youth Power Plant and Suseongcheon (stair-type) Power Plant.
- North Pyongan Province: Increase operating capacity of power generators

⁵ See Choi Woon-suk (1992, 13).

⁶ The joint editorial of *Rodong Sinmun* (Workers’ Daily), *Choson Inmingun* (Choson People’s Army), and *Youth Junwi* (January 2002).

in Taechon Fourth Unit Power Plant and Supung Power Plant, and construction of small- and middle-sized power plants.

- South Pyongan Province: Reinforce the Bukchang Thermal Power Plant's generating capacity.

Since the inception of the socialist regime, North Korea's energy policy has pursued a balanced development of hydroelectric power generation and thermal power generation to overcome the concentration on hydroelectric power generation, which is more than 90 percent. North Korea's plan was to raise the proportion of thermal power generation to 32 percent in its first Seven-Year Plan and the supplementary years (1961–1970). However, this effort brought the rate up to only 18 percent, resulting in a dependency on hydroelectric power until the late 1960s.

In the 1970s, North Korea concentrated on constructing thermal power plants in hopes of creating a balance between thermal and hydroelectric power. As a result, thermal power generation rose to 43 percent after the first Six-Year Plan (1971–1976). North Korea further increased the proportion of thermal power plants in the second Seven-Year Plan (1978–1984) to 68 percent by 1984. The third Seven-Year Plan aimed at building the Taechon power plant and increasing energy production. However, most of the power production goals assigned by the economic plan were not achieved. (See Table 6-1.)

Table 6-1. Stated Goals for the Energy Sector

Classification	Duration	Goals
Six-Year Plan	1971–1976	<ul style="list-style-type: none"> - Increase power generation to 28–30 billion kWh. - Complete construction of Seodusu Power Plant, initiate construction of Geumseong Hydroelectric Power Plant and Gicheon Power Plant, and normalize small- and middle-sized power plants. - Maintain and repair electric power supply system. - Expand campaign for energy conservation.
Second Seven-Year Plan	1978–1984	<ul style="list-style-type: none"> - Increase power generation to 56–60 billion kWh. - Complete construction of Daedong River Power Plant, Wuiwon Power Plant, and Huichon Second Unit Power Plant. - Increase power cable transmission site following the expansion of newly established industrial centers.
Third Seven-Year Plan	1987–1993	<ul style="list-style-type: none"> - Increase power generation to 100 billion kWh by building hydroelectric plants. - Complete Taechon Power Plant construction and increase small- and middle-sized hydroelectric plants. - Increase thermal power plants using low-heat briquette.

North Korea turned its attention to thermal power plants because of the advantages in construction cost, duration, and number of workers required for plant operation. Thermal power plants also seemed advantageous because of North Korea's vast coal resources. Moreover, during the dry season, the operating capacity of hydroelectric power plants drops, thus severely decreasing the amount of power generated. For all those reasons, North Korea needed to develop balanced sources of power.

Geographically, North Korea has abundant water resources and large quantities of anthracites that can be used for hydroelectric generation. The annual water resources are estimated to be 55.6 billion tons, 85 percent of which is for industrial use. Most of the industrial water is used for hydroelectric power generation. The total amount of water used for hydroelectric power is about 43 billion tons. The potential hydroelectric generating capacity of North Korea is about 8.3 million kilowatt-hours (kWh) and developable hydroelectric power per square kilometer (km²) is 77.4 kilowatts (kW). The rate of developable hydroelectric power per km² is comparatively higher than the world average of 50 kW.

Thermal power generation also seems natural to North Korea because of its wealth of high heat-value anthracite. For this reason, North Korea's thermal power plants are situated around major anthracite production sites: the mines at Sunchon, Deokcheon, Bukchang, Kaechon, Kujang, and Daedong in the Pyongan Province. The Chongchon River Thermal Plant is located in the Anju mining area, and Chongjin Thermal Plant is located in the northern mining area in the North Hamgyong Province. In terms of aid from neighboring countries, thermal power generation was assisted by the Soviet Union, and hydroelectric generation was aided and jointly conducted by China. In 1999, the capacity of North Korea's electric facilities was around 7.4 million kW, and electricity production was 19 billion kWh. The capacity of North Korea's generating facilities and electricity production are respectively 16 percent and 8 percent that of South Korea's. When comparing North and South Korea's hydroelectric power generation, one realizes that North Korea's is around 4.45 million kW higher

Table 6-2. Capacity of North Korea's Power Facility and Electricity Status by Year

	1974	1985	1990	1996	2001
Generating Capacity (10,000 kW)	433	595	714	739	775
Generated Amount (100 million kWh)	174	251	277	213	202
Type	Hydroelectric	97	123	156	125
	Thermal	77	128	121	88
	Nuclear	—	—	—	—

Source: Korea Development Bank, *Industries in North Korea* (2002, 261).

than South Korea's 3.15 million kW. Thermal power generation of North Korea is 2.95 million kW lower than South Korea's 50.94 million kW. North Korea has no nuclear power generation, but South Korea's nuclear power generation is about 13.7 million kW.

As mentioned earlier, North Korea is currently expanding the construction of small- and middle-sized power plants under 1 million kW to supply electricity for small-scale regional factories and households. The construction of small- and middle-sized power plants began in August 1982 after Kim Il-sung ordered most to be built. It is estimated that since 1996, about 6,700 small- and middle-sized power plants have been constructed across North Korea (Table 6-3). However, most of them are small-sized power plants (under 100 kW) for regional electricity supply and, consequently, are not helpful in stabilizing the power supply. Therefore, North Korea is focusing on building a limited number of small- and middle-sized power plants with improved power-generating capacity.

North Korea reported that about forty small- and middle-sized power plants were erected in 2002, and an estimated twenty to thirty were constructed in 2003.

According to a report by the Korean Central Broadcasting Station, North Korea is able to supply power for household electric heating and factories in small towns and districts, as well as irrigation water to paddy fields and dry fields. The newly acquired power-generating capacity is several tens of thousands of kW and scores of small- and middle-sized power plants are in the final stages of construction.⁷ North Korea has also built seven wind-powered generators with the help of the Nautilus Institute from the United States. The generators are reported to be in operation, but the generating capacity is only nine kW per unit.

Table 6-3. Construction of Small- and Middle-Sized Power Plants

	Until 1996	1997	1998	2000	2001	2002	Total
Number of Plants	185	300	5,000	130	80	40	6,735
Total Generating Capacity (kW)	90,000	60,000	36,000	26,000	18,400	—	310,400
Average Generating Capacity Per Generator (kW)	486	200	7	200	230	—	46

Source: The Ministry of Unification, *Weekly Newsletter on North Korea*, no. 612.

⁷ Ministry of Unification, *Weekly Data on North Korea*, no. 616 (1–7 November 2002).

North Korea's hydroelectric generation facilities include these power plants: Seodusu, Unbong, Wuiwon, Huichon River, Jangjin River, Kanggye Youth, Bujeon River, Taepyeongman, and Daedong River, plus the 0.7 million-kW-capacity Supung Power Plant. Hydroelectric power plants in construction as of 1991 were these: Taechon, Mt. Kumgang, Kumya River, Huichon River, and Nam River. (See Table 6-4.) Taechon Power Plant is one of the four Nature Improvement Projects proposed at the fourth plenary session of the Sixth Central Committee of the Korean Workers' Party. Currently, it is in the first stage of construction. Mt. Kumgang Power Plant in Tongcheon generates an estimated 0.8 million kW and, when completed, will be the largest hydroelectric power plant in North Korea.

Major thermal plants in North Korea are Pyongyang, Eumgi, Chongchon River, and Sunchon, as well as the Bukchang Thermal Power Plant that produces 1.6 million kW. The Bukchang, Pyongyang, and Unggi Thermal Power Plants were built with the aid of the Soviet Union.⁸ Those plants use coal for fuel, except Eumgi Thermal Plant, which uses only heavy oil. During the third Seven-Year Plan (1987–1993), power plant construction in Eastern Pyongyang, Anju, Sariwon, Haeju, December, and Kimchaek was planned. However, very few of them, including the Eastern Pyongyang Thermal Plant, are in partial operation.

The North Korean government has long shown interest in nuclear power generation in its pursuit of a self-reliant energy policy and, therefore, has great expectations for nuclear power plants. It believes nuclear power could contribute to solving the energy crisis it faces, allowing the country to maximize its abundant uranium reserves and not to depend on oil imports. In the third Seven-Year Plan, North Korea announced that it would build a 0.44 million kW nuclear power plant with the assistance of the Soviet Union. However, that plan has been delayed because of the disintegration of the Soviet Union and the ensuing economic stagnation there.

It is said that North Korea has no nuclear power plants, but it does operate one 5,000 kW pilot nuclear power plant in Yeongbyeon, at which construction started in 1979 and operation began in 1986. The pilot power plant was modeled

⁸ The generating facilities aided by the Soviet Union are reported to be Supung Power Plant (0.7 million kW), Pyongyang Thermal Plant (0.5 million kW), Bukchang Thermal Plant (1.6 million kW), Unggi Thermal Plant (0.1 million kW), east Pyongyang Thermal Plant (50,000 kW), Sonbong Thermal Plant (0.2 million kW) and Chongjin Thermal Plant (0.15 million kW). For details, see Alexander Timonin (1996).

Table 6-4. Hydroelectric Power Plants in North Korea

Name	Location	Capacity (10,000 kW)	Construction Period	Features
Supung	Sakju, N. Pyongan Province	70	1941–1944	50% of generated power is transferred to China
Seodusu	Daeheungdan, Ryanggang Province	39	1941	Interchangeable drainage area
Huichon River	Huichon County, S. Hamgyong Province	39	1940–1943	Toshiba of Japan
Jangjin River	Yeonggwang County, S. Hamgyong Province	39	1938	Fifth unit was completed in 1967
Bujeon River	Sinheung County, S. Hamgyong Province	23	1932	German technology
Buryeong	Buryeong, Chongjin City	4	1940	Stair type, interchangeable drainage area
Dokro River	Manpo City, Jagang Province	9	1959	Was initiated by Japan (1937), completed with aid from Soviet Union
Kanggye Youth	Manpo City, Jagang Province	25	1964	Was initiated by Japan, completed by North Korea
Unbong	Jaseong County, Jagang Province	20	1970	North Korea–China joint project; 50% of 0.4 million kW is tunnel type
Miringabmun	Sadong District, Pyongyang	8	1982	Daedong River floodgate
Bonghwagabmun	Kangdong County, Pyongyang	2	1983	Daedong River floodgate
Daedong River	Deokcheon County, S. Pyongan Province	20	1983	
Taepyongman	N. Pyongan Province	10	1987	North Korea–China joint project
Taechon	Taechon County, N. Pyongan Province	35	1988	Interchangeable drainage area, joint facilities with China (North Korea capacity)
Wuiwon	Wian County, Jagang Province	39	1990	50% of power generated transferred to China
Nam River	Kangdong County, Pyongyang	14	1993	North Korea's own technology
Anbyeon Youth	Anbyeon County, Kangwon Province	10	2000	Most recently completed power plant, plans for further expansion
Total		405		

Source: Data are developed from Jung Woo-jin (1996) and Korea Electric Power Corporation (1998).

after the Calder Hall Nuclear Power Plant with a cooling system. It uses graphite and carbon dioxide as moderators and natural uranium for fuel.

Table 6-5. Status of Thermal Power Generation in North Korea

(unit: 10,000 kW)

Name	Location	Capacity	Features
Bukchang	Bukchang, S. Pyongan	160	Completed construction of first unit in 1972 and second unit in 1984; largest power plant in North Korea
Pyongyang	Plains of Pyongyang	50	Completed in 1970; aided by USSR; uses waste heat
Sonbong	Unggi County, N. Hamgyong	20	Completed in 1977; aided by USSR; uses petroleum
Chongchon River	Anju County, S. Pyongan	20	Completed in 1977
Chongjin	Chongjin city	20	Completed in 1986; aided by China
Sunchon	Sunchon County, S. Pyongan	20	Located in Sunchon Vinylon Factory; aided by China
Eastern Pyongyang	Nangnam District, Pyongyang	5	Construction started in February 1989 to be completed within the near future
December Power Plant	Daeam District, Nampo city	5	Completed in 1996
Total		300	

Source: Data are developed from Jung Woo-jin (1996) and Korea Electric Power Corporation (1998).

North Korea seems to face electrical shortages caused by the halting of crude oil donations by the Korean Peninsular Energy Development Organization (KEDO), because most of the thermal power plants use crude oil from KEDO. The donated crude oil is consumed at Sonbong, Cheonjin, Sunchon, Bukchang, and Hwanghae Thermal Power Plants, while Pyongyang and Eastern Pyongyang Thermal Power Plants use subsidiary fuels. Although North Korea planned for increased production of electricity in 2002 through completion of Geumjin River Sixth Unit Youth Power Plant and Anbyeon Second Unit Youth Power Plant, plus construction of small- and middle-sized power plants, electricity shortages are explained by stagnation of coal production, poor transport systems, and a decrease in rainfall.

North Korea's current plan for increasing electricity production is broken into three phases starting in 2003 and ending in 2005. It is called the Three-Year Plan for Solution of Fuel and Energy Problems (2003–2005). In that plan, North Korea actively supports use of coal for production of electricity, consolidation of the transportation system, construction of small- and middle-sized power plants, repair and improvement of power plant facilities, and development of alterna-

tive energy sources. Also, Kim Jong-il encourages production of electricity through field guidance at Kumya River Power Plant, Hungju Youth Power Plant, Orangchon River Power Plant, Eunhung Youth Power Plant, and military-operated small power plants such as the People's Army Unit 841 Sungri Power Plant and People's Army Unit 549 Eundok Power Plant. It is also known that when Kim was on field guidance at Orangchon River Power Plant on 20 July 2003, he strongly emphasized collaborative work between the national and provincial power plants despite shortage of resources after the economic settlement.

North Korea's energy budget reported a positive change of 12.8 percent from 2002 to 2003. According to an industrial report from the government released on 7 December 2002, maximum electricity production has been achieved in thermal and hydroelectric power plants, as well as the achievement of modernizing the electricity supply. However, it is believed that actual normalization is limited.

b. Railroads

Railroads are North Korea's major means of transportation, with roads as an accommodating means. Railroads are responsible for 90 percent of freight and 60 percent of passenger traffic. North Korea actively constructed railroads to establish a transportation network for economic purposes and to restore the railroads built by the Japanese during the colonial period.

Kim Il-sung commented on the importance of railroads, saying, "In order to build a new country, we need to rebuild the destroyed industries and to achieve economic prosperity. To that end, we need to restore the railways, which are the national arteries, and [to] normalize transportation."⁹ Kim also stated, "The railway system can be compared to the circulation of blood in our bodies. Stable operation of the railway will guarantee agricultural and industrial productivity, allowing prompt construction of a democratic economy and guarantee people's lives."¹⁰ Such statements from Kim Il-sung show the significant status and role of railroads to the North Korean economy.

North Korea emphasizes the railroad as a means of transportation because of its mass transportation capacity, timely manner, and low cost. The average traction weight of electric locomotives in North Korea is about 1,300 tons, which is comparatively higher than the 1,000-ton average loading ability of North Korea's coastal maritime transport. The cost of railroad transportation in North Korea is

⁹ Korean Worker's Party Press, *Collection of Kim Il-sung's Writings*, Vol. 1, 398.

¹⁰ Korean Worker's Party Press, *Collection of Kim Il-sung's Writings*, Vol. 2, 294.

reported to be 34 percent and 53 percent of automobile and maritime transport, respectively. The average transport distance of North Korean railroad freight is about 160 kilometers (km), fifteen times the automobile freight transport distance and 1.7 times the coastal maritime transport distance.

The basic direction for the transportation system in North Korea was set in December 1977, at the first session of the Sixth Supreme People's Assembly. Kim Il-sung proposed the development of a centralized and containerized transportation system and stressed the need for connecting transport systems. He also stressed his desire to improve the railroad's overall transport ability through electrification and automation of signals, as well as increased production of railroad cars and new tracks.¹¹ Thus, the basic direction of North Korea's railroad policy is to ensure stable and consistent transport for "the people's economy" by strengthening the physical and technical aspects of the railroad, which would carry out a central role in executing the development plan. (See Table 6-6 for a comparison of railways in North and South Korea.)

Moreover, North Korea established a militaristic set of rules and orders to strengthen the teaching and to control ideology in the railroad sector. Such rigorous emphasis implies that the freight transport ability has reached its limit and that the antiquated railroad facilities are hazardous. North Korea created rules and orders and increased transport by establishing such campaigns as the "100-Day Battle" and the "No Accident on the Railroad" campaigns. It is also operating the military-like Youth Battalion as part of the railroad construction project.¹²

Table 6-6. Comparison of Railways in South and North Korea

Classification		South Korea	North Korea
Length of route (km)		3,125	5,224
Electrification	Length (km)	661	4,211
	Electrification rate (%)	21	81
Dual gauge	Length (km)	901	156
	Dual gauge rate (%)	29	3

Source: Internal data of the Korea Transport Institute.

¹¹ According to the definitions from the *Choson Unsusa* (the History of North Korean Transportation), "Centralized transport system refers to cars with large-scale cargos such as minerals and coal that are linked to trains that go directly to their destination without stopping for loading or unloading. Containerized transport system refers to a transport system that circulates cargos from factories and enterprises in standardized containers. Connecting transport system refers to a system using the coordination of different kinds of transport such as railway, automobiles and ships." Park Man-hyup (1988, 401–2).

¹² After the initiation of the Youth Mechanized Company for Pyongyang Railway Unit under the Pyongyang Railway Department in March 1973, a Youth Mechanized Company was organized in all

The total length of all railroad tracks in North Korea at the end of 2001 was 5,224 km, including the narrow-gauge railway. This 20 percent increase is from 1965. South Korea's total length of rail was 60 percent of this figure, at 3,125 km.

The allotment rate of transportation vehicles, which is an indicator of structure of transportation methods, shows that the railroad is responsible for 92.8 percent of freight per transport ton/km in North Korea, which is more than four times the 20.0 percent level of South Korea. North Korea's passenger rate is twice that of South Korea.

The electrification rate of North Korea is 81 percent, comparatively higher than South Korea's rate of 21 percent. The high rate results from adapting the railroads to North Korea's geographical features and energy supply. Single-track lines make up 98 percent of all rails and have a low operation speed because of age and inferior quality.

North Korea signed the North Korea–China Railway Operation Agreement on 25 January 1954. This agreement allowed for the operation of passenger trains from Pyongyang to Beijing beginning 3 June 1954. Along with the Sinuiju–Dandong line that connects Pyongyang to Beijing, the Manpo–Jian and Namyang–Tumen lines are in operation. The Chongjin–Namyang–Tumen line uses the Chongjin Port as the point of intermediate freight transport between Japan and Guilin, Liaoning, and Heilungjiang in China.

In October 1983, the Sinuiju–Dandong line started its passenger operation along the Pyongyang–Beijing section, which was operated solely by China. The line runs Pyongyang–Sinuiju–Dandong–Tianjin–Beijing. The total length is 1,347 km, the run takes about 22 hours, and it is a shuttle service operated four times a week.

The Namyang–Tumen line was made in the 1960s by the Borderline Travel Train Operation Agreement to ensure the movement of borderline residents in North Korea and China. However, because of the frequent incidents of North Koreans escaping to Manchuria on this line during the 1990s, North Korea unilaterally closed it down. However, the agreement is still standing.

The Hongui line, an international railway connecting with Russia, was established in 1963 and linked Hongui to the Tumen River. It connects the Hambuk line with Khasan Station in Far Eastern Russia. It is connected to Russia's Siberian Railroad, which has a run of Vladivostok–Khabarovsk–Irkutsk–Omsk, and

railway units under all railway departments including Hamhung, Chongjin, and Kaechon. Also, fatigue parties such as the 25 April Battalion and *Pibada* (Sea of Blood) Royal Guards were organized to improve productivity.

is operated under mutual cooperation of the North Korea–Russia Joint Borderline Railway Commission. This line seems to be used mostly for freight from Russia. Since April 1987, a 10,214-km, weeklong shuttle service of international passenger trains running Pyongyang–Khasan–Khabarovsk–Baikal–Moscow has been provided twice a week.

North Korea's geographical borders with Russia and China allow for its railroad connection with those two countries, and this network is used for transportation of international freight and passengers. The International Transportation Office of the Department of Railway is in charge of the national railway operation. The international transport centers are located in Sinuiju, Manpo, Namyang, and the Tumen River area.

Before independence, North Korea operated six lines to China and one line to Russia; but after the Korean War, three of the China lines were destroyed. Currently, four international lines are operating: three China lines, Sinuiju–Dandong, Namyang–Tumen, and Manpo–Jian; and one Russia line, Tumen River–Khasan.

The transport ability of trains in North Korea continued to rise until the 1980s because it improved facilities and large-scale equipment. As a result of the economic crisis during the 1990s, transport ability is now static.

Major freight items carried on railroad are coal (32 percent), minerals (12 percent), and construction materials (8 percent), followed by metal (6 percent), lumber (6 percent), grains (4 percent), and chemical fertilizer (3 percent). The regional distribution of freight transport shows that only four provinces carry out 80 percent of all freight transport in North Korea: South Pyongan Province (30 percent), North Hamgyong Province (24 percent), South Hamgyong Province (17 percent), and North Pyongan Province (10 percent). North Korea allocated eighty central freight stations around the country, including cities such as Pyongyang, Kaechon, Hamhung, and Chongjin. Those sites include facilities such as trailers, cranes, warehouses, and loading and unloading sites, but no means of transportation would carry freight from producers to stations and from stations to users and consumers.

North Korea's major rail lines consist of ten key lines and ninety branch lines. The major west lines connecting the west side of the Korean peninsula are the Pyongui line and the Pyongbu line. On the east side are the Pyongna line, Mt. Kumgang Youth line, and Hambuk line. The major inland lines—Manpo line and Mt. Paekdu Youth line—connect inland cities, while the east-west lines—Youth Icheon line and Pyongna line—connect the east and west side of North Korea. Tables 6-7 through 6-11 show the status of major east-west express railway lines.

Table 6-7. Railroads of the West Lines

Name	Block	Distance (km)	Notes
Pyongeu	Pyongyang-Sinuiju	225	Became electric in 1964
Pyongbuk	Chongju Youth-Cheongsu	121	
Baegma	Baegma-Southern Sinuiju	44	
Pyongbu	Pyongyang-Kaesong	187	
Pyongnam	Pyongyang-Pyongnam Hot Spring	90	
Pyongdeok	Deokcheon-Kujang Youth	192	

Table 6-8. Railroads of the East Lines

Name	Block	Distance (km)	Notes
Pyongna	Ganri-Rajin	781	Completed railroad construction in the Pyongyang-Chongjin block in 1992
Sinheung	Hamhung-Bujeon Lakeside	92	Became electric in 1992
Deokseong	Sinbukcheong Youth-Sangri	52	
Huichon	Dancheong Youth-Honggun	80	
Geumgol	Yeohaejin-Geumgol	63	Provides heavy transport of minerals from Sangunsong to Omongri
Hambuk	Banjuk/Hoeryong-Rajin	327	
Musan	Mt. Gomu Youth-Musan	58	Used for transport of iron ore in Musan Mine
Kangwon	Kowon-Pyonggang	145	
Mt. Kumgang Youth	Anbyeon-Mt. Kumgang	102	Began operation in April 1997

Table 6-9. Railroads of the East-West Lines

Name	Block	Distance (km)	Notes
Youth Icheon	Pyongsan-Sepo Youth	141	Began operation in 1972
Pyongna	Ganri-Rajin	781	Opened Chongjin-Rajin block in 1965

Table 6-10. Railroads of the Inland Lines

Name	Block	Distance (km)	Notes
Manpo	Sunchon-Manpo border line	303	
Youth Palwon	Kujang Youth-Palwon Youth	40	Connects the Cheongsu line and Manpo line
Kanggye	Kanggye-Nangnim	57	

Table 6-10. (Continued)

Name	Block	Distance (km)	Notes
Mt. Paekdu Youth	Kilju Youth–Hyesan Youth	142	Began operation in 1990 (electric railroad)
Baekmu	Baekam Youth–Musan	187	
Samjiyeon	Wilyeon–Motga	82	Used for visiting Kim Il-sung's battle site

Table 6-11. Railroads of the West Circular Lines

Name	Block	Distance (km)	Notes
Hwanghae Youth	Sariwon Youth–Haeju port	100	
Eunnyul	Eunpa–Cheolgwang	118	Used for transport of iron ore in Eunnyul Mine
Baecheon	Jangbang–Eunbit		

The recent status of freight transport on major lines is as follows.

(1) *Pyongbu Line.* Pyongbu line refers to the 187-km line from Pyongyang to Kaesong. Hwanghae Joint Iron Mill, 8 February Cement Joint Enterprise, Sariwon Textile Factory, and Hwangbuk District Anthracite Collective Enterprise are located along this line. Freight transport on this line carries freight from those enterprises, mines, and plants. Coal takes up the highest percentage of carried freight, and raw metals such as pig iron and steel materials are transported in the Pyongyang direction.

There are six central freight stations: Kaesong, Pyongsan, West Sariwon, Seoheung, Hwangju, and Junghwa. West Sariwon station is in charge of freight from Sariwon city and the Bongsan area. The major freight is anthracite, fertilizer, steel, lumber, construction stone, sand, and gravel. Kaesong station is in charge of freight from Gaepung, Panmun, and the Jangpung area. Major incoming freight is anthracite, fertilizer, salt, steel, and cement. Major outgoing freight is construction stone (granite) and scrap iron.

(2) *Pyongui Line.* The Pyongui line extends for 225 km, connecting Pyongyang to Sinuiju. The whole line became electric in August 1964. With the change to electric power, its transport capacity and transit ability improved. There are seven central freight stations: Sinuiju, Yongcheon, Dongnim, Chongju, Sinanju, Sukcheon, and Seopo.

This railroad passes through the industrial areas of Chongchon River and

Sinuiju, Bukjung and Nakwon Joint Machinery Enterprises, Yongampo Shipyard, Chongchon River Thermal Plant, and Anju District Joint Mining Enterprise. Major transport items are coal, minerals, metal, wood, and cement. Anthracite from Kaechon and Soonchun is sent to Pyongyang, and bituminous coal from Sinuiju and Anju is sent to Chongchon River Thermal Plant. Sinuiju station is a border station that crosses over the Yalu River, connecting with Dandong station in China. Sinuiju station handles freight intended for export and import. The major export freight is anthracite, while the major import freight is coking coal. Imported coking coal is supplied to the Hwanghae Joint Iron Complex by way of Sinuiju station and Jangcheon station of the Songrim line.

(3) *Pyongna Line.* The Pyongna line passes through Sunchon–Kowon–Hamhung–Dancheon–Kilju–Chongjin and continues on to Rajin. It is responsible for 85–90 percent of all west–east freight exchange. This line became electric during the Six-Year Economic Plan (1971–1976), which improved its transport capacity. Seventeen stations are on this line, including Kowon, Hamheum, and Rajin.

Most of the freight carried on this line consists of fuel and raw materials such as coal and minerals used in factories and enterprises, as well as construction materials, fertilizer, and metals that are produced from those facilities. Coal is disbursed from Sunchon Joint Cement Factory throughout the country, including to Nampo port, a major export harbor. Metal is sent from major industrial areas in the east, such as Kimchaek Joint Iron Complex, to major factories in the west.

The Pyongna and Kangwon lines are directly connected to the plateau central freight stations and to the Youth Icheon line. Thus, the Pyongna line is partially responsible for the east–west freight. Freight items include imported coking coal and wood, minerals, metal, fertilizer, and marine products. Coking coal is imported from China through Namnyang station of the Hambuk line and sent to Hwanghae Joint Iron Complex by way of the Kangwon and Youth Icheon lines. Chemical fertilizers are sent from Hamhung area to the plains in North and South Hwanghae Provinces. Grains are produced in the plains of North and South Hwanghae Provinces and sent to the east coast.

Hamhung station is connected to the Sinheung Youth and Jangjin lines, and it handles freight to the Hamhung industrial area. The major incoming shipments are of coal, minerals, building materials, salt, and fuel. The major outgoing freight is chemical fertilizer, chemical products, building materials, and other industrial products.

Banjuk station is near Chongjin station and is connected to the Hambuk Line, a circular line of North Hamgyong Province. This railroad is particularly impor-

tant because it links foreign shipments from China and Russia in the border areas. Major freight items are coal, wood, minerals, fertilizer, cement, and marine products. The Rajin freight station is connected to the Hambuk line and transports fuel and material supply to the Rajin-Sonbong industrial area and products made in Rajin-Sonbong throughout the country.

The Pyongna line is mostly connected with maritime transport and runs beside Rajin, Chongjin, Kimchaek, and Hamhung ports along the east coast. Hungnam port is connected to factories and enterprises in the Hamhung area, including Hungnam Joint Fertilizer Enterprise, Buryeong Joint Alloy Steel Enterprise, Hungnam Refinery, and Yongseong Joint Machinery Enterprise. Dancheon port is connected to Dancheon Magnesia Factory and Dancheon Refinery. Factories in the Kimchaek area, such as Songjin Joint Steel Complex and freight factory within Songjin, are connected to Kimchaek port. Chongjin Steel Complex and Kimchaek Joint Iron Complex are connected to Chongjin port, and freight of the Tumen River area is collected in the Rajin-Sonbong port for joint transport.

(4) *Manpo Line.* The Manpo line traverses the Gwanseo area and connects the western plains with Kanggye and Huichon, which are military industrial areas. The Manpo line became electric in 1980. It plays an important role in the freight transport of mining areas, such as Kaechon and Kujang, and mechanical industrial centers, such as Huichon, Jeoncheon, Kanggye, and Manpo.

The basic cargo along the Manpo line is coal and wood. The coal is produced at the Kujang and Joyang mining areas and is then sent to major factories and enterprises throughout Kaechon and Kujang. A lumber refining workshop is located in the Unbong area, which distributes hundreds of thousands of tons of wood nationwide over the Manpo line.

The Manpo and Kaechon lines are connected at the Kaechon central freight station. Because of the branching of the Joyang Mining line, 70 percent of the freight is coal. Kujang central freight station is an important transportation point because this is where the Youth Palwon and Pyongdeok lines cross. It handles coal and cement, as does the Kaechon station.

(5) *Hambuk Line.* Bordering China and Russia, the Hambuk Railroad plays an important role in foreign import and export. It has five central freight stations: Sonbong, Saebyeol, Onsong, Hoeryong, and Buryeong. At the border, the Hambuk line is connected to Namnyang and Tumen stations in China. The Hongeui line, a branch line of the Hambuk Line, is connected to Khasan station of Russia through the Tumen River station. The major freight items are coal, minerals, wood, crude oil, chemical fertilizer, and coking coal. Coal from

Hoeryong coal mine, Secheon coal mine, Musan mine, and Onsung mine is transported jointly by the Hoeryong Mine line, Musan line, and Hambuk line. Major foreign trade freight is magnetic iron concentrate, magnesia krinka, colored metal, and colored metal concentrate.

Hoeryong station is the branching-off station of the Hoeryong Mining line that delivers products from the Hoeryong Mining line area and nearby coal mines such as Gungshin, Secheon, Dongpo, and Sungpyong mines to areas around the country; it mainly handles coal and minerals. Buryeong station is adjacent to Gomusan station and delivers freight from the Musan line, steel concentrates from Chulseong Station, and cement from Gomusan Cement Factory.

Onsung central freight station is near Namnyang station and plays an important role in handling freight imported to and exported from China. Major import freight is coking coal, and major export freight is steel concentrate, talcum powder, steel material, and various marine products. The Tumen River station intermediates trade with Russia. Major imported freight is wood and crude oil, and major export freight is magnesia krinka, chemical fertilizer, steel, colored metal, and colored metal concentrate. Freight imported from Tumen River station is carried to Rajin-Sonbong by both rail and maritime transport.

In joint editorials printed in *Rodong Simmun* (Worker's Daily), *Choson Inmingun* (Choson People's Army), and *Youth Junwi* on 1 January 2003, North Korea emphasized both railroad transportation and electricity, as well as the coal and metal industries, as major parts of the people's economy, and it emphasized the necessity of renovation in those categories.

As a result, North Korea's first-quarter railroad policy stressed modernization and information-oriented propulsion. On 5 January, a meeting commemorating the field guidance of Chairman Kim Jong-il at Kim Jong-tae Electrical Locomotive Factory in January 2002 was held to discuss production and technical renovation of railroads. Also, in the Cabinet Assembly suggestions for improving the railroad system were presented to accomplish the goals of the New Year joint editorial mentioned above.

Kim Yong-sam, the Minister of Railroads, spoke at the National Railroad Labor Convention in February 2004: "Through improvement of transportation organization and leadership we can normalize railroad transportation. This will reinforce national defense and increase security, first and foremost of transportation, and improve delivery of both everyday resources such as electricity and coal, and also metal industry resources in a timely manner." Those comments reinforce the importance of a technical base and the modernization of railroads according to the demand of the information industry's era. His speech implies that the railroad has an important role and position for national security. But rail freight transport is not ensured a timely scheduled operation or helpful

economics. The Central Committee of the Korea Worker's Party acknowledged that the government could not provide enough financial resources and other materials necessary for railroad transportation at the same convention.

At the beginning of the second quarter (April–June), a new motto was announced by the Central Committee of the Korea Worker's Party and the Central Military Committee. The motto commemorated the fifty-fifth anniversary of the DPRK regime. It encouraged building innovative rules for the railroads, normalizing railroad operation, and propelling modernization of the railroads.

Another significant fact about North Korea's railroads is that in 2003, North and South Korea held several executive conferences related to railroad connection, plus working group meetings about railroad and highway connections. As a result of those contacts, about 3.5 km of the Kyongui line and about 3 km of the Donghae line in North Korea have been constructed. North Korea plans to construct a cargo loading station within Kaesong Industrial Complex to connect with the Kyongui line and Panmunjom station. The new loading station would be able to transfer and guide additional trains.

In mid-October, North Korea carried out basic research on connections between the Trans-Korean Railway and the Trans-Siberian Railway by permitting examination of the railroad between Khasan and Rajin by investigation teams from the Department of Russian Railroads.

c. Roads

North Korea's roads are supplementary to railroads and are usually used for short-distance transportation. Roads are considered “an important aspect of [the] people's economy and a means to meet transport demand, guarantee economic development and ensure convenience for the people.”¹³ Kim Jong-il, chairman of the National Defense Commission, said, “Roads have an important role in our country's economy and the convenience of the people. Well-constructed and managed roads meet increased transportation demand, and guarantee people's lives.”

The established principles for road building in North Korea are “solving transportation problems in remote mountain areas, realizing mechanization of rural areas, and construction of roads that does not encroach on farmland.”¹⁴ That road transport is limited to short distances of 30 km.

Most of the roads in North Korea were built during the Japanese colonial

¹³ Ahn Byung-min, Jun Il-soo, and Lee Je-hoon (1998, 88).

¹⁴ *Ibid.*, 89.

period but were destroyed and unusable after the Japanese left and were further destroyed during the Korean War. Like the railroads, roads in North Korea were constructed by the Japanese for exploitation, such as material transport and military purposes. Therefore, after the division of the Korean peninsula, most major roads went North–South and short distances so they could connect port cities. Under such circumstances, North Korea repaired roads and built new roads and bridges in the inland area.

Until the 1980s, roads in North Korea were used primarily as a means of connecting major railroad stations or ports. The basic policy was that only in areas without railroad or water networks would the road act as the means of long-distance transport. However, North Korea is starting to emphasize the importance of road transport, thereby signaling North Korea's desire to abandon its railroad-based transportation policy. North Korea assesses that roads are effective in mobility and speed and can carry freight whenever desired. Also, it is reported that for shorter distances of 150–200 km, road transport is cheaper in transport cost; the cost of road construction is less than 10 percent of the cost of railroad construction.¹⁵

The *1990 North Korea Almanac* states that North Korea's roads (levels I–VI) extend about 75,500 km. However, when counting roads of only level IV and higher (allowing two-way passage), the total extension of roads in North Korea is about 23,300 km. The total length of highways in North Korea is 661 km; only six routes are paved with concrete or asphalt. The second Pyongyang–Nampo highway, which was begun in 1998 and completed in 2000, is 46.3 km in total length, with twelve lanes and is paved with asphalt.

There are ten level-I roads in North Korea, which are Pyongyang–Kaesong, Pyongyang–Nampo, Pyongyang–Wonsan, Pyongyang–Sinuiju, Pyongyang–Manpo, Wonsan–Rajin, Bukcheong–Hyesan, Sariwon–Haeju, Wonsan–Goseong, and Wonsan–Gimhwa. Although unpaved sections still exist along those roads, most sections in the Pyongyang–Kaesong, Wonsan–Goseong, and Sariwon–Haeju routes are paved. The level-I road of Pyongyang–Kaesong runs almost parallel to the Pyongbu Railroad line. From Sariwon, the level-I road of Sariwon–Haeju branches into other roads. Five level-II roads—Pyongsan–Huicheon, Pyongsan–Haeju, Kaesong–Haeju, Hwangju–Songrim, and Geumcheon–Majeon—also diverge from this point. Major freight on this route includes agricultural products, fertilizer, and minerals.

A level-I road, Pyongyang–Sinuiju, passes over about 100 bridges, including

¹⁵ Research Institute of Geographical Studies of the North Korean Academy of Social Science (1989, 259).

the Chongchon River Bridge and Daeryeong River Bridge. Four level-II roads—Shinanju–Kaesong, Shinanju–Nampo, Bakcheon–Chosan, and Chongju–Sakju—stem from this road. Major freight on this route is agricultural products and fertilizer. Level-I roads are narrow in width and are curved, and out-of-date tunnels and bridges are in serious condition. As shown in Table 6-12, North Korea's roads increased by 17 percent over twenty-eight years, from 20,000 km in 1970 to 23,407 km in 1998. This increase is slower than South Korea's two-fold enhancement from 40,244 km in 1970 to 86,990 km in 1998. Although there could be many reasons for the sluggish road construction, it can be argued that the railroad-based transportation policy of North Korea is the major reason.

Table 6-12. Progress of North Korea's Road Expansion

(unit: km)

Year	1970	1975	1980	1985	1990	1995	1996	1997	1998
Extension	20,000	20,670	21,000	21,735	23,000	23,339	23,369	23,377	23,407

Source: South Korean National Statistics Office (1999, 75).

Note: Roads of levels V and VI are excluded.

In June 1964, North Korea rated its roads from levels I to VI and established management responsibilities for each type of road.¹⁶ Level-I roads refer to roads connecting the capital city with provincial capitals. Level-II roads connect provincial capitals with other provincial capitals, and level-III roads connect provincial capitals with cities containing county offices. Level-IV roads connect cities with county offices to villages, level-V roads connect towns to towns, and level-VI roads connect villages to villages. The vehicle operational standard of level-I roads is more than 5,500 vehicles per day, 2,500–5,500 vehicles per day for level-II roads, 800–2,500 vehicles per day for level-III roads, 300–800 vehicles per day for level-IV roads, and 150–300 vehicles per day for level-V roads.

The central government is responsible for managing highways and main roads of levels I–III, while regional governments are responsible for main roads of levels IV–VI. The composition of roads by level is shown in Tables 6-13 and 6-14.

The total road length in North Korea was 60,538 km according to 1982 data. About 80 percent of those roads were under level IV and were less than 2.5

¹⁶ In June 1964, Kim Il-sung ordered the Department of Internal Affairs and Urban Management Council to divide the roads into six levels for effective management and road maintenance, while assigning management responsibilities for each road.

meters wide, which is not suitable for automobile use. Considering North Korea's low rate of road construction, their status probably has not improved much.

Table 6-13. Status of Road Extension by Level

Level	Number of Routes	Length (km)	Proportion (%)	Pavement Length (km)
Highway	7	682.0	1.1	682.0
Level I	10	2,289.7	3.8	921.4
Level II	29	4,299.6	7.1	283.3
Level III	145	5,939.3	9.8	386.8
Level IV	638	8,334.2	13.6	203.3
Level V	—	7,697.4	12.6	41.4
Level VI	—	31,744.5	52.0	46.9
Total		60,986.7	100.0	2,565.1

Source: Research Institute of Geographical Studies of the North Korean Academy of Social Science (1989, 336).

Table 6-14. North Korea's Road Structure by Level

Level	Routes	Lanes Width (m)	Width (m) Passage (no.)	Shoulder	Daily Vehicle
Level I	Roads connecting capital and provinces	More than 2	More than 3.5	More than 1.5	More than 3,500
Level II	Roads connecting provinces	2	3.5	1.0	1,500–3,500
Level III	Roads connecting province–county, county–county	2	3.0	0.75	500–1,500
Level IV	Roads connecting county–town	2	2.75	0.5	200–500
Level V	Roads connecting towns	2	2.5	—	100–200
Level VI	Roads connecting villages	1	—	—	Under 100

Source: Recreated from Korea Research Institute for Human Settlements (1992, 402).

The purpose of roads in North Korea is (1) to increase automobile transport in order to achieve normalization of production and construction by supplying necessary raw materials, industrial materials, and equipment, and (2) to ensure close connection and balance of production and consumption. Roads should also reduce the cultural, social, and economic gap between urban and rural areas. Roads are an important factor in evaluating the level of cultural and technical development of a country, and roads are thought to play an important role in the

¹⁷ Kim Jun-gi, Lee Chung-wan, and Oh Mu-il (1991, 11–12).

cultural and economic development of North Korea.¹⁷ Therefore, North Korea considers roads as “an important component of [the] people’s economy” and “a means to meet transport demand, guarantee economic development, and improve people’s lives.”

It should be noted that North Korea considers roads an important factor in winning a war. North Korea has stated, “The more developed roads allow for greater utilization of the transport system. Through the improvement of roads, coordination between the front line and the home front will be stronger, which guarantees high mobility of military activities and creates advantages for victory.”¹⁸ Kim Il-sung mentioned several times that the principal goal of road construction is “to solve transportation problems in mountain areas, mechanize rural areas, and not encroach on farmland.” Such instructions from Kim Il-sung have become the guiding principle of road construction in North Korea.

North Korea has seven highways: Pyongyang–Sunan, Pyongyang–Wonsan, Pyongyang–Nampo, Pyongyang–Kaesong, Pyongyang–Huichon, Wonsan–Mt. Kumgang, and Sariwon–Sinchon. Their total length is 682 km. The road network in North Korea can be broadly divided into five groups (Table 6-15). There are two routes in the Yellow Sea group routes: Panmunjom–Kaesong–Geumcheon–Sariwon–Hwangju–Junghwa–Pyongyang–Sunan–Sukcheon–Chongju–Yongcheon–Sinuiju and Haeju–Jaeryeong–Nampo–Pyongwon.

There are two routes in the East Sea group: Poseong–Wonsan–Hamhung–Songjin–Kilju–Chongjin–Rajin–Ungjin–Aoji–Onsong and Pyonggang–Wonsan–Hamhung–Chongjin–Soksari–Huchang.

The routes connecting the east and west are the Pyongyang–Wonsan Highway and the Jangsangot–Songhwa–Jangyeon–Nampo–Pyongyang–Kangdong–Yangdeok–Deokwon route.

There are three northern inland routes: Pyongyang–Icheon–Goksan–Yangdeok–Huichon–Chosan, Sinbukcheong–Gapsan–Hyesan, and Yongjamri–Taechon–Sangyongpyong–Musan. The west and east of northern North Korea along the Yalu River and Tumen River are connected by the Sinuiju–Supung–Chosan–Manpo–Huchang–Hyesan–Hoeryong–Onsong route.

North Korea mobilized the army, civilian workers, and members of the Workers’ Party for road construction and repair. The government started mobilizing soldiers in 1974 for construction of the Pyongyang–Wonsan Highway.¹⁹ Party members and workers were mobilized for the construction of regional roads of levels I–VI. Workers and engineers of forest enterprises were mobilized for forest road construction.

¹⁸ Kim Su-yeon (1992, 107).

Table 6-15. Status of North Korea's Main Road Network

Route Group	Notes
Yellow Sea Group	Connected to South Korea and linked to China with the possibility of connecting with the western coastline highway. Panmunjom–Kaesong–Pyongyang–Chongju–Sinuiju route and Haeju–Nampo–Pyongwon route.
East Sea Group	Passes through Rajin-Sonbong area, Shinpo light water reactor area, and Mt. Kumgang tour area. Linked with northeastern China and Russia.
West–East Connecting Group	The road connecting North Korea's west and east is the Pyongyang–Wonsan Highway and Jangsangot–Nampo–Pyongyang–Yangdeok–Deokwon route. Because the Nangnim mountain range crosses through North Korea's central area, roads are narrow and have a steep gradient.
Northern Inland Group	Built with the purpose of developing natural resources in North Korea and most of the roads are unpaved. Existing roads are Pyonggang–Chosan, Pyonggang–Huchanggan, Sinbukcheong–Hyesangan, and Yongjamri–Musan.
West–East Borderline Group	The roads in Sinuiju–Chosan–Hyesan–Onsong follow the borderline of North Korea and China, connecting the mountainous areas and borderline areas. Most are unpaved, are 4–8 meters wide, and have one or two lanes.

North Korea manages roads through road management agencies. It established a highway management agency in 1978 and placed staffs for major expressways (levels I–IV). Roads of levels IV–V are managed by relevant cooperative farms and state-owned ranches. Historical battle site roads are managed by relevant management agencies. In North Korea, there are two Road Protection Weeks every year: one week in either March or April, and one week in either September or October, during which everyone is forced to help repair roads.²⁰ Those weeks are organized by the Department of Social Security, and instructors are dispatched to construction sites for technical guidance.

d. Ports

The division of the Korean peninsula has meant that North Korea faces geographical limitation in connecting the east coast and west coast. Because North

¹⁹ “Kim Il-sung guided the highway construction plan and granted the People’s Army the honorable task of carrying it out. The People’s Army started construction for highways according to the order of the Party in March 1974” (Kim Su-yeon 1992, 110).

²⁰ In 1978, Kim Il-sung ordered public participation in the road construction and repair project. “The project must be carried out by the whole public. All organizations and enterprises with cars and people should also participate in the road management of their towns” (Korean Worker’s Party Press, Collection of *Kim Il-sung’s Writings*, Vol. 23, 1983, 198).

Korea's maritime transport that connects the east coast and west coast must cross the Straits of Korea, west-east transport is virtually impossible. Therefore, North Korea's maritime port policy before the 1960s was limited to improving and repairing the existing ports and coastal transport networks.

However, after the implementation of the Seven-Year Development Plan in 1961, North Korea focused on maritime transportation and ports. The target of the Seven-Year Plan in the maritime transport area was to ensure coastal transport and expand connections with railroads, and especially to improve foreign trade using ships. Important ports such as Nampo, Hungnam, Chongjin, Wonsan, and Dancheon will be enhanced and equipped with modern facilities to enable the entrance and exit of big vessels.

Indeed, with the increase in oil imports during the expansion of foreign trade in the 1970s, the construction of wharves was strongly encouraged exclusively for crude oil transport and the expansion of loading and storing facilities in harbors. With such basic goals, North Korea maintained and reinforced existing trade ports and established new trade ports such as Rajin, Songrim, and Haeju. Independent shipbuilding of freighters also started at this time. As a result, according to the *1990 North Korea Almanac*, North Korea's freight passage capacity increased by sixfold in ten years, from 1980 to 1989, and the loading capacity of ships increased by scores.

There are eight trade ports, five pelagic marine base harbors, and 30 fishery ports. The trade ports are Chongjin, Rajin, Sonbong, Hungnam, Wonsan, Nampo, Songrim, and Haeju. The 1998 data on port facilities show that the wharf facility is 15.6 km (Chongjin: 5.3 km, Nampo: 1.9 km, Rajin: 2.3 km); the loading capacity is 35 million tons (8.4 percent of South Korea's); and the amount of freight handled is 16 million tons (2.1 percent of South Korea's). However, because of the aged port facilities, the usage rate is 3 percent, a sharp contrast to the 90 percent rate of railway usage and 7 percent road usage. Even in foreign trade, the excessive freight cost caused by the obsolete port facilities is a hindering factor in trade expansion between South and North Korea.

Although North Korea's coastline is about 3,000 km, it is distinctly separated into west and east by its geographical characteristics. Thus, organic marine transport between coastlines is physically impossible. Also, trade with North Korea's major trade partners is possible by road and rail, which further hinders the development of the shipping industry. There are no multipurpose wharves that can handle container freight. Loading and unloading facilities are not automated. Outdated facilities, poor management, and lack of information cause a transport jam even when the amount of freight handled is smaller than capacity.

(1) *Chongjin Port.* Chongjin Port is located in Chongjin city of North

Hamgyong Province and was constructed in the 1930s. Chongjin Port is divided into the east port and west port, and it is the center of foreign trade of North Korea. Compared to other ports, Chongjin Port has a developed land-transport network with the railroad and roads directly connected to it. The railroad is connected to Russia and China by the circulating railroad of the Chongjin-Rajin section and the Chongjin-Onsong section. A broad-gauge mixed track (with four standard rails) is branched from Russia to Chongjin. The distances from Chongjin to other major border stations are as follows: 146 kilometers to Chongjin–Namnyang, 96 kilometers to Chongjin–Sambong, and 120 kilometers to Chongjin–Tumen River. Chongjin Port handles freight from China to Japan, acting as a foothold for international multitransport.

The total ground dimension of Chongjin Port is 1,013,750 square meters (east port: 192,500 square meters, west port: 821,250 square meters) and the distance from anchorage is 1.8 knots (3,334 meters) for the east port and 1–2 knots (1,852–3,704 meters) for the west port. The freight-handling capacity of Chongjin Port is reported to be 8 million tons when adding both the east and west ports, but if the country is to fulfill such handling capacity, modernization of facilities is necessary. The current capacity is estimated to be about 3–3.5 million tons.

(2) *Rajin Port.* Rajin Port is located in Rajin city of North Hamgyong Province and was constructed by the Japanese in 1938. Rajin Port covers 38 hectares (ha), and its total storage facilities are 20.3 ha, including a 2.8-ha storage area and a 17.7-ha cargo-stacking area. The railway entrance line is 16 kilometers (km), with an 11.7-km broad-gauge railroad that is the same size as the Russian railway. After the establishment of the socialist regime, the Soviet Union used the port exclusively since 1965, but Rajin Port was changed into a trade port in 1974. Rajin Port consists of three wharves and ten berths. The wharves were constructed using the caisson method with steel concrete. The water depth is 9.7 meters, and 10,000-ton vessels can come alongside the berths. The annual loading ability of Rajin Port is 3 million tons, but 0.11 million ton is actually handled.

North Korea has divided the Rajin Port development plan into two stages. The first stage is to increase the loading capacity by 10 million tons by modernizing loading facilities, port services, and storage facilities. The plan is to expand the loading capacity of the first wharf to 1.2 million tons, the second wharf to 3.8 million tons, and the third wharf to 5 million tons. The second stage is to construct four new wharves and to build a 50-ha cargo-stacking area, a 14-km train entrance track, a 2.7-ha storage area, and a 700-meter conveyer line. The midterm plan is to build a quay that allows the anchoring of 0.1- to 0.2-million-ton vessels and obtains a total freight handling capacity of 20 million tons, comprising 12 million tons of iron ores and coal and 8 million tons of containers.

(3) *Hungnam Port.* Hungnam Port is located twenty kilometers southeast of Hamhung city. Construction began in 1927 and finished in 1930. Compared with other ports, the geographical location and natural conditions of Hungnam Port are quite favorable. Physically, it is protected from wind and waves, and the area of the harbor is fairly large. It is the best port on the east coast, with the tidal range being only about 30 centimeters. The anchorage site is located about ten knots southeast of the port.

Hungnam Port has four quays; three 10,000-ton freighters and two 4,000-ton freighters can anchor simultaneously. There are five cranes (large is ten tons and small is two tons) in the quays and comparatively many small loading machines. The total area is 0.2 million square meters with three storage areas. There are also two private rails and a 25,000-square-meter cargo-stacking area with a cement floor. Major export items of this port include magnesium, fertilizer, cement, steel, and machines. Imported items are mostly light industrial products from Russia.

(4) *Haeju Port.* Haeju Port is located southwest of Haeju, South Hwanghae Province, and is only 200 kilometers from Incheon Port, South Korea. This newly developed foreign trade port opened in September 1973 and has one 300-meter-long quay. The depth of water at high tide is twelve meters and seven meters at low tide. The waves in the anchoring basin are rough and the wind is strong, which creates bad conditions for anchorage; anchors move easily in the sand. Haeju Port has two ten-ton quay cranes, three two-ton quay cranes, and one cargo-stacking area. A private rail is directly connected to the quay. The major cargo handled in this port is cement.

(5) *Songrim Port.* Songrim Port is located to the northeast of Nampo Port. The water depth near the port is eighteen meters, and about twenty-three meters deep in the middle. The water depth at low tide is nine meters and fifteen meters in the central route. Although affected by the tide, 0.1-million-ton vessels can lie at anchor. There are three quays. One is a quay exclusively for raw steel, and the other is a quay exclusively for oil, where 10,000-ton vessels can anchor. North Korea plans to develop this port as a raw material trading port because 20,000-ton vessels can enter at high tide. There are two cranes in this port, one of which carries eighteen tons. As for port facilities, there are three 1,000-ton crude oil tanks, one 5,000-ton crude oil tank, and three oil pipelines.

(6) *Nampo Port.* Nampo Port is located seventy kilometers southwest of Pyongyang on the lower part of Daedong River. The tidal range of Nampo Port

is 1.6–6.3 meters, and the water depth is 12–13.5 meters at high tide. It is the biggest international port on North Korea's west coast. Nampo Port is divided into west and east quays. Both quays are concrete, straight embankment-type quays. The east quay is about 300 meters, and the water depth is 5.3–8.9 meters at low tide; the west quay is 250 meters, and the water depth at low tide is 7 meters. Mostly foreign ships are anchored at this port.

Nampo Port has nine quays and five anchorages: three 10,000-ton freighters and two 3,000-ton freighters can anchor at the same time. There is a coal quay in the eastern part of the port, which has a maximum water depth of ten meters, allowing anchorage of 10,000-ton freighters. The most common freight items are anthracite, cement, steel, tractors, various mechanical equipment, light industrial products, and agricultural products.

During the second Seven-Year Plan, North Korea carried out a full-scale expansion of Nampo Port. During harbor dredging, all the companies in the port were moved elsewhere, breakwaters were built from the south lighthouse of the east quay along the river to the coal quay in the east, and the cargo-stacking area was expanded. A quay exclusively for grains was recently constructed on an island near Nampo Port, and a modern quay was also recently built in Yongnam village, eight km from Nampo Port. The water level was raised by building a large river embankment at Daedong River, which allowed direct entrance of vessels into Pyongyang.

Table 6-16. Facilities of Major Trade Ports in North Korea

Name	Quay Length (m)	Major Equipment	Notes
Chongjin	5,270	15-ton cranes	- Facility and equipment had enhancement in 1974 - Started intermediary trade of China with Japan in 1983
Hungnam	1,630	10-ton general and gantry cranes	- Opened in 1960 as trade port
Rajin	2,280	5- to 15-ton cranes	- Opened as trade port in 1974
Wonsan	2,250	—	- Opened as trade port in 1976 - Is currently used for military purposes
Nampo	1,890	5-ton cranes, maritime cranes	- Connects Pyongyang with highway electric trains - Is used as an east port quay for coal
Haeju	1,350	10-ton cranes	- Opened as trade port in 1974
Songrim	700	18-ton cranes	- Opened as trade port in 1975 - Is exclusive quay for Songrim Steel Complex
Sonbong	600		- Developed as oil import port

Source: Lloyd's of London Press, *Lloyd's Ports of the World*. Essex: LLP Limited, 1996.

B. Problems of North Korea's SOC

The paramount problems with North Korea's SOC are its obsolescence caused by lack of proper maintenance and repair of facilities, as well as the deterioration of its economic efficiency because infrastructural facilities are operating below capacity. The problems of the SOC sectors are as shown below.

1. Electricity

The actual operating rate of North Korea's hydroelectric power plants, including the plant at Yaru River and Tumen River, is about 20 percent, a low level caused by their outdated power facilities and frequent breakdowns. In particular, because power plants in Hamgyong Province were made during the Japanese rule, most of them have become outdated, resulting in low power-generating capacity.

The power produced in the Yaru River Plant is supplied to the industrial areas of Pyongyang, Nampo, Kaesong, and Sinuiju, which are also densely populated regions. If the energy demand from those regions were not met, the consequences would be tremendous for North Korea's industries. Therefore, it is necessary to develop new power resources and to repair existing power generation facilities in the Yaru River, which is currently managed jointly by North Korea and China. If necessary, it is recommended that neighboring countries of North Korea participate in the repair and improvement of facilities and have rights to sell electricity according to the investment proportion.

North Korea's thermal power plants use coal for fuel. But supply of coal is not efficient because of transportation bottlenecks and outdated mining equipment. Also, the breakdown rate of equipment is high, and the overuse of aged equipment results in the decline of power generation. Because most of the thermal plants in North Korea were built with Russian aid, repair and improvement of the facilities could be carried out by a consortium of relevant foreign countries including Russia (power generator and wiring by Russia, supply of equipment parts and construction by South Korea, and supply of labor and civil construction of general power plants by North Korea).

2. Railroads

Pyongeu, Pyongbu, and Pyongna railways that would be linked to the disconnected Trans-Korea Railway (Kyongui line) need to be immediately repaired. In addition, investment priority should be given to the maintenance of the Manpo line that runs to China and Russia, and the Pyongnam line that connects

Pyongyang with Nampo. For those railroads, a gradual development task plan should be made according to the analysis of freight volume trends and single tracks needing to become double tracks. In particular, immediate attention should be given to making Pyongeu and Pyongbu railroads double-track. Along with those recommendations, establishing a new traffic information system would improve communication and signal systems, as well as increase transfer speed of freight and reduce empty carriages.

3. Roads

In the roads sector, primary attention should be given to restoring the six disconnected roads between South and North Korea. Improvement of the Rajin–Wonjeong route, the Pyongyang–Kaesong Highway, and Pyongyang–Wonsan Highway, as well as supplementary roads connecting Chongjin, Wonsan, Nampo, Haeju, and Rajin Port is also of foremost importance.

From the Yellow Sea group of roads, the Kaesong–Pyongyang Highway and Pyongyang–Anju Highway need to be improved. The existing level-I road of the Anju–Sinuiju section should be made into a two-lane road. For the East Sea group of roads, the Mt. Kumgang–Wonsan Highway should be maintained, and the existing road on the Wonsan–Onsong section should be expanded into a highway. For the group of roads crossing the country from east to west, the Pyongyang–Wonsan Highway should be expanded. For the north inland area, Anju–Huichon and Huichon–Manpo routes should be paved and maintained.

4. Ports

The urgent task needed with the ports in North Korea is the improvement of facilities to expand harbor capacity. Therefore, in the short run, establishing and dredging harbor facilities and creating operation systems are recommended. Particularly for trade ports, container cargo equipment (mobile harbor cranes, top-lifters, etc.) and multipurpose quay cargo equipment (multipurpose cranes, fork trucks, etc.) need to be added to ports. Because low-water depth limits the entrance of large ships, large-scale dredging is needed. In the long run, North Korea also needs to improve the capability of its major trading ports and to develop specialized ports. If the country is to support foreign trade, ports exclusively for large containers should be developed and should serve as bases for intermediate handling of Russian and Chinese freight.

References

In Korean

- Ahn Byung-min, Jun Il-soo, and Lee Je-hoon. 1998. *Comprehensive Traffic Network in Preparation of Unification*. Seoul: Korea Transport Institute.
- Bang Wan-joo. 1988. *Survey of Chosun*. Pyongyang: Encyclopedia Press.
- Choi Woon-suk. 1992. *National Land Management and Building National Economy in Socialist Society*. Pyongyang: North Korean Academy of Social Science Press.
- Chosun Inmingon (Chosun People's Army)*. Various issues.
- Kim Jun-gi, Ri Chung-gwan, and Oh Mu-il. 1991. *History of Transport in Chosun 3 (Automobile Transport)*. Pyongyang: Industrial Press.
- Kim Su-yeon. 1992. *Great Reform in National Land Management Project*. Pyongyang: North Korean Academy of Social Science Press.
- Korea Development Bank. 2000. *Industries in North Korea*. Seoul: Taeyang Press,
- Korea Electric Power Corporation. 1998. *Study on the Structure of Electricity System of South and North Korea*. Seoul: Korea Electric Power Corporation.
- Korea Research Institute for Human Settlements. *Handbook of North Korea's National Development*. Seoul: Korea Research Institute for Human Settlements. Various issues.
- Korean Worker's Party Press. *Collection of Kim Il-sung's Writings*. Various volumes.
- Ministry of Unification. *Weekly Data on North Korea*. Various issues.
- North Korean Academy of Social Science. 1985. *Dictionary of Economy*.
- Park Man-hyup. 1988. *History of Transport in Chosun 2 (Railway Transportation)*. Pyongyang: Railway Press.
- Research Institute of Geographical Studies of the North Korean Academy of Social Science. 1989. *Compendium of Geography of North Korea*. Vol. 20. Transport Geography. Pyongyang: Research Institute of Geographical Studies of the North Korean Academy of Social Science.
- Rodong Sinman (Worker's Daily)*. Various issues.
- South Korean National Statistics Office. 1999. *Comparison of Social and Economic Aspects of South and North Korea*. Seoul: South Korean National Statistics Office.
- Timonin, Alexander. 1996. "Forecast of Economic Cooperation among South Korea, North Korea, and Russia." In *Tongil-Kyongjae (Unified Economy)*, Vol. 13, pp. 119–25. Seoul: Hyundai Economic Research Institute.
- Youth Junwi* (January 2002).

In Japanese

Japanese Association of Civil Engineering. 1995. *A Study of Social Overhead Capital*. Tokyo: Economic Research Institute.

Jung Woo-jin. 1996. *Energy Industry in North Korea*. Tokyo: Government Press Agency,

In English

Lloyd's of London Press. 1996. *Lloyd's Ports of the World*. Essex: LLP Limited.

Chapter 7

Commerce and Distribution Sector

North Korea's commerce system supplies goods such as daily necessities to the public. North Korean workers are paid in cash for their labor according to quality and quantity. Citizens use their salaries to purchase food and goods at state-run stores at official prices. Formerly, official prices applied to all goods sold to the public. However, in July 2002, the government steeply raised official prices, and changes have followed in many areas. While some changes have been positive, such as greater profit-seeking in economic management and the possibility of earning additional income, other changes have been negative, including public discontent and surging black-market prices caused by supply and demand imbalances. These are the main problems currently faced by North Korea's commerce and distribution sector.

This chapter explores the changes in North Korea's commerce and distribution sector after the July 1 Economic Reform of 2002 and then forecasts the sector's future. Background knowledge on the operation of the North Korean commerce and distribution sector¹ will be provided to help the reader understand the changes that are occurring.

A. Conditions in Commerce and Distribution by Category

1. Management Organizations for Commerce and Distribution

In North Korea, commerce and distribution are planned by the state. Plans

¹ Korea Institute for International Economic Policy (2002, 306–28).

for commerce and distribution (including product distribution, procurement, and food administration) are made in the Cabinet's Commerce Ministry, and plans that are approved by the State Planning Committee are adopted.

After a plan is approved by the State Planning Committee, it is sent back to the Commerce Ministry, which devises concrete measures to execute the plan. Those measures are conveyed through the Wholesale Commerce Management Office and the Local Commerce Guidance Office to the commerce and distribution centers and companies of each *do* (province) and city. The Wholesale Commerce Management Office follows the party's commerce policy and the plans of the State Planning Committee, and is responsible for managing the distribution of goods, improving the quality of goods in distribution, and managing the regional wholesale centers.²

Wholesale stores include the Central Wholesale Store, provincial stores for each *do*, and regional stores that distribute goods for each city and *kun* (county). Specialized wholesale stores exist for goods such as textiles, footwear, refreshments, meat, fishery products, and farm products.

The Central Wholesale Store acquires the goods produced by state-run production enterprises and sends them to wholesale shipping centers or regional wholesale stores. The wholesale stores in each *do* act as shipping centers for the production enterprises in their area.

Retail stores are the basic units that buy necessities from wholesalers and that distribute them to the North Korean public. According to the goods distribution plan, the wholesale store acquires goods from production enterprises and distributes them to the retail stores, which take the goods and distribute them through the commerce network.

North Korea's commerce network includes grocery stores, industrial goods stores, specialized and general stores, stores that stock special goods, large- and small-scale stores, workplace stores, consignment stores, and department stores. Department stores are large-scale stores located in all major cities. Each *li* and *dong* (village) has a direct sales store or shop. Inns, restaurants, and barbershops are also available. This management system for commerce has existed since the July 1 Economic Reform.

² The institutions under the Wholesale Management Office play the following roles. The Planning Office creates distribution plans and prospects and then delegates them to subordinate institutions. It also regulates how the plans are carried out. The Bookkeeping Office creates spending plans for the funds allocated by the Wholesale Management Office and is responsible for allocating goods in distribution and measuring profit and loss. The Transport Office creates transport plans and guides and regulates all transport tasks, while the Textile Office and Food Office allocate textile and food products and adjust the consumption and supply of their subordinate enterprise centers.

Recently, North Korea has promoted the construction of commerce facilities in Pyongyang in order to build a commerce network. Since the July 1 Economic Reform of 2002, modern general store buildings have been introduced in Pyongyang's Youngwang, Seungri, Chilsungmun, Gaesunmun, and Beudunamu streets.³ A store selling home appliances and home interior products for foreign currency has also been established. The latter store, occupying about 1,000 square meters, offers goods such as floor supplies, paints and varnishes, windows and curtains, sofas, toilets, and kitchen equipment. North Korea has allowed foreigners to open stores in Pyongyang, which is a break from the past, when only members of the *Jochongryun* (Association of North Korean Residents in Japan) were allowed to invest in joint projects in the service industry.

2. Forms of Commerce and Commerce Management System

a. Forms of Commerce

North Korea's commerce consists of commerce in consumer goods (through wholesale⁴ and retail⁵ sales), social rations,⁶ and purchasing.⁷ Wholesale commerce is operated by the Central Wholesale Store, wholesale shipping centers, regional wholesale stores, and specialized wholesale stores. Wholesale commerce is an intermediate step between the production enterprise and the consumer. It usually takes place in large quantities between production enterprises and commerce centers, or among commerce centers.

North Korea's wholesale commerce is managed by the Commerce Ministry's Wholesale Commerce Management Office, and the wholesale commerce of the People's Committee of each *do* is managed by the Wholesale Commerce Management Bureau.

Retail commerce stores buy daily necessities and directly distribute them to the public. Those stores are responsible for moving goods from the distribution sector to the consumption sector. Retail commerce follows a distribution plan

³ *Rodong Shinmun* (24 August 2003).

⁴ Wholesale commerce acts as an intermediary between production and retail commerce. It acquires goods from production enterprises and supplies them to retail centers.

⁵ Retail commerce provides goods directly to workers.

⁶ The social rations program prepares food and supplies it to workers. It is a form of retail business but also performs a production and distribution role.

⁷ Purchasing consists of the state buying cooperatively and privately owned goods, but deals mostly with agricultural goods.

for goods, called the Retail Goods Distribution Plan.⁸ The plan includes sales plans, guarantee plans, and commerce network arrangement plans. There are two types of retail prices: official retail prices and farmers' market prices.

North Korea's social rations program produces various food products and sells them to the public. Although it has a retail commerce function in that it sells goods to workers, the program is also similar to a capitalist restaurant because it produces the food. Prices and quantities for social rations are determined by regional party offices or by rations management organizations. Since the 1990s, social rations facilities have suffered many difficulties from the shortage of food and raw materials in North Korea.

Purchasing consists of statewide purchasing of farm, livestock, and fisheries products. Those agricultural products are acquired through the national purchasing network and distributed to industrial workers and the urban population. For purchases, the state pays farmers the costs of production as well as a certain amount of profit. The quantity and price of purchases are determined by the North Korean government.

b. Commerce Management System

North Korea's commerce is managed through the Commerce Guidance and Management System⁹ and the Goods Distribution System.¹⁰ Its commerce management system is characterized by the separation of administrative guidance and management. Administrative guidance is provided by the Commerce Ministry to the commerce administration branches of People's Committees in each *do*, city, and *ku*. Management of commerce differs for wholesale and retail commerce; wholesale commerce is managed by a central government body,¹¹ while retail commerce is managed by the local governments.^{12,13}

North Korea's commerce management is divided according to ownership

⁸ The plan is drafted considering workers' demand by region, season, and class.

⁹ This system consists of all bodies that manage commerce nationally.

¹⁰ This system consists of all bodies that acquire and distribute goods.

¹¹ Wholesale commerce is centrally managed so that the state can control the entire goods distribution process, from production to retail. To achieve this goal, a wholesale management division exists in North Korea's Commerce Ministry. Under its authority, a *do* wholesale management department, a shipping wholesale center, and regional wholesale centers exist.

¹² Retail commerce is managed by local governments, which are responsible for distributing goods to citizens. The North Korean government is establishing retail commerce management centers in each city and *kun*. All stores related to distribution in each city and *kun* receive their goods through these commerce management centers.

¹³ North Korean Academy of Social Science (1985, 59).

into state-run commerce, cooperative group commerce, and farmers' market commerce. State-run commerce accounts for the vast majority of goods distribution and is run by the state's planned management and operation. The Central Party Office's planning includes development of the commerce network, scale of goods distribution, distribution costs, labor, and other indexes. Goods sold under state-run commerce are subject to official prices.

Cooperative group commerce is based on joint ownership and is managed and operated by cooperative groups. Cooperative group commerce supports state-run commerce and is defined as one step before "people's" ownership.¹⁴ In co-operative group commerce, goods and funds are jointly owned.

Farmers' markets are formed by private citizens as a second source of income and have free-market characteristics. They act to supplement the shortages in the state distribution system, allowing local residents to meet at a prescribed area to buy and sell goods.¹⁵ The farmers' market was started in August 1958 (Cabinet Decision 140) to replace traditional markets, which had been abolished. The markets were held in places such as farmers' fields to sell farm and livestock products as a supplement to regular work. In the mid-1990s, however, large-scale food shortages caused a collapse in the official food distribution system, and the farmers' markets expanded and included black-market transactions in an attempt to provide an alternative supply. In 2003, it is estimated that there were more than 1,000 farmers markets, including temporary markets. Currently, farmers' markets occupy an important place in North Korea's commerce distribution.

3. Forms and Systems of Distribution

There are four main forms of distribution in North Korea: (a) distribution of goods and services produced at state-run enterprises; (b) distribution of goods and services produced by cooperative group enterprises or as supplemental jobs by individuals; (c) distribution of public services provided by the government, such as defense, security, maintenance of public facilities, and social security; and (d) transactions in the farmers' markets.

Goods and services produced by state-run enterprises are sold to other state-run enterprises as resource materials, where the wholesale price includes the production cost, the enterprise's profit, and the transaction income; to cooperative group enterprises as intermediate or investment materials; to consumers

¹⁴ *Ibid.*, 244–45.

¹⁵ Korean Worker's Party Press (1983, 465).

directly, where the retail price includes wholesale price, transaction income, and extra business charges; and to cooperative farms and state-run farms as production factors, where the price includes production cost only.

Goods produced by cooperative group enterprises and individuals are distributed (a) through farmers' markets or retail stores, where the transaction price is the market price determined by supply and demand or is determined by the price of raw materials, depreciation, and remaining income for the cooperative group or individual; (b) through state-run purchasing organizations to be used as intermediate goods in state-run enterprises, where the transaction price is the purchasing price; (c) to consumers or other individual producers; or (d) to cooperative group enterprises as consumption, investment goods, or as intermediate goods, where the transaction price is the purchasing price plus the transaction income and additional commerce fees.

Public services are provided free of charge by the government, but their price can be calculated as the sum of the costs of intermediate materials, depreciation, and labor.

Transactions in the farmers' markets consist of transactions taking place between individuals or cooperative groups or black-market exchanges occurring between individuals or with foreign merchants near border areas. Prices for those exchanges are affected by supply and demand, and they are freely determined by the participants.

4. Price Determination System

a. Types of Prices

Unlike capitalist systems, where prices are determined by supply and demand, prices in North Korea are determined by state plans. Two levels of prices exist: producer prices that the state pays to producers and consumer prices that the consumers pay to retailers.

Prices include wholesale prices, industrial wholesale prices, commercial group retail prices, purchasing prices, transportation, and fees. Wholesale prices apply when goods or a means of production is distributed among state-run enterprises. They are usually calculated by adding the production cost—which includes the production cost, depreciation, wages, and administrative and maintenance fees—to the enterprise's net profit.

Industrial wholesale prices are calculated by adding the wholesale prices and a wholesale import fee, which is a form of indirect tax. Those prices mostly apply to goods such as lumber, electricity, and agricultural products from state-run farms and ranches.

Commercial group retail prices are wholesale prices plus distribution costs, such as purchasing costs, transport costs, wages, and packaging, with a profit margin added. They usually apply when individual consumers buy goods from retail stores. Retail prices for necessities are set at relatively low levels, while those for luxury goods, scarce goods, or goods that are not necessities are set at higher levels.

Purchasing prices apply when agricultural and livestock products are purchased, and they are divided into planned and free purchasing prices. Planned prices are determined by the state, while free purchasing prices depend on supply and demand.

Shipping rates are the fees paid to transport services and are determined by the state. Shipping rates usually consist of cost and profit.

Fees are the prices that institutions, enterprises, and citizens pay for various services, such as electricity, postal service, communication facilities, infrastructure, printing facilities, and repair services. Fees are divided into productive and nonproductive fees. Productive fees consist of cost and profit, while nonproductive fees consist of cost and profit transaction income.

Commerce distribution costs are included in the above costs, and they include costs related to extending or completing production (e.g., shipping fares, storage costs, packaging costs, product sorting, and additional processing costs) plus net distribution costs spent in the process of selling and buying goods (e.g., living expenses of commerce workers, advertising costs, depreciation, building and other maintenance costs, office costs, communication costs, and traveling expenses).

b. Reform of Price Determination System

Prices are determined by the central government and local administrative units. The Cabinet's Price Enactment Committee sets prices from the central government, while *do* administrative committees set prices for local units.

North Korea gives limited price-setting authority to local factories. According to the price-setting principles and standards that are set by the state and are under the supervision of higher institutions, local factories may decide the prices of the goods they produce.

In July 2002, North Korea steeply raised prices and wages and reformed the price determination method (Table 7-1), while delegating some of the state's planning authority to lower bodies. Factories and enterprises were also given a limited degree of management discretion. A market for raw and subsidiary materials was opened,¹⁶ distribution was more differentiated, and the social security system was reformed.

After the measures, the price of a kilogram of rice showed a 558-fold increase from 8 jeon to 44 won, corn prices showed a 400-fold increase from 6 jeon to 24 won, and bus and subway fares in Pyongyang showed a 20-fold increase from 10 jeon to 2 won. Train fare from Pyongyang to Chongjin showed a 37-fold increase from 16 won to 590 won, while house rental fees, which were previously 5–10 won per square meter a month, rose to 6–15 won per square meter per month, making the monthly rent for most houses a few hundred won.

Table 7-1. Key Price Reform Measures

Product	Former Price	New Price	Price (increase)
Rice (kg)	8 jeon	44 won	550-fold
Corn (kg)	6 jeon	24 won	400-fold
Pork (kg)	7 won	180 won	26-fold
Eggs (one egg)	17 jeon	8 won	47-fold
Naengmyun (noodles) (bowl)	10 won	150–200 won	15–20-fold
Soap (bar)	2 won	10 won	5-fold
Fan	100 won	2,000 won	20-fold
Bus, subway fare	10 jeon	2 won	20-fold
Train fare from Pyongyang to Chongjin	16 won	590 won	37-fold
Electricity (kWh)	3.3 jeon	2.1 won	66-fold
Housing rent (m ²)	15 jeon	6–15 won/month	40–100-fold
Songdo resort (entrance fee)	3 won	50 won	17-fold

Source: Author.

Meanwhile, the monthly earnings of factory laborers, which were about 85 to 110 won, rose to an average of 2,000 won. The monthly earnings of managers at trading enterprises rose from 150 won to 3,000 won, while that of miners rose to more than 4,000 won.

Along with the wage increase, differential compensation is being emphasized according to occupation, enterprise, region, and performance.

¹⁶ Markets for raw and subsidiary materials originally did not exist in North Korea, but factories and enterprises were permitted to deal in specified raw materials and components after a Socialist Materials Distribution Market was created. However, payments in this market could be made only through banks, which upheld the principle of noncash distribution for exchanges of factors of production.

Table 7-2. Wage Increases by Occupation (Monthly)

Occupation	Before Increase	After Increase	Level of Increase
Laborer, Office Worker	85–110 won	1,800–2,000 won	18–21-fold
Miner	130–140 won	3,000–4,000 won	23–29-fold
University Professor	200 won	4,000–5,000 won	20–25-fold
School Teacher	120 won	2,880 won	24-fold
Doctor	80–150 won	1,200–2,250 won	15-fold
Soldier, Member of Special Organization	150–250 won	1,500–2,500 won	10-fold
Party Member	170 won	850 won	5-fold
Reporter, Broadcaster	150–200 won	4,500–6,000 won	30-fold

Source: Author.

Under the previous distribution system, the state provided citizens with food, consumer goods, and housing nearly free of charge, but this free distribution effectively ended with the drastic price and rent increases following the July 1 Economic Reform. In the past, rice prices reflected only the costs of production such as water, electricity, and fertilizer, but after the economic measures, they were affected by global market prices as well as domestic supply and demand. However, social security benefits such as education, health care, and social insurance are still provided free.

B. Trends and Issues in Commerce and Distribution after the July 1 Economic Reform

1. Trends in Commerce and Distribution

a. Opening of General Markets

The main changes in the North Korean economy following the July 1 Economic Reform include reform of the price system, wage increases, invigoration of regional markets, changes in the monetary and foreign exchange management system, and imposition of taxes on citizens.

After the July 1 Reform, North Korea first embarked on reforming the distribution structure for farm and industrial products. An attempt was made to create a goods distribution system in which the purchasing prices of farm and industrial products were close to actual prices in places such as farmers' markets. However, although food products traded at higher prices, they were distributed in the same way as before.¹⁷

To establish a goods distribution system, North Korea controlled existing

marketplaces, limiting the goods that they sell to only farm produce, while arranging for food and necessities to be sold at state-run stores. As a result, markets were basically allowed to sell only vegetables, while the sale of other items, except for selected goods such as rice and industrial products, was prohibited. Citizens were persuaded to sell their rice supplies to state supply centers (formerly called state distribution centers) at officially determined prices. Other goods could be sold only through state-run stores. To verify that the markets were selling only permitted goods, various inspection groups, such as the People's Security Ministry, Prosecution Center, and standing investigation groups were used.¹⁸ As a result, in some cases, merchants sold their goods at below market price to state-run stores, or sold their goods through state-run stores and received the sales price minus a 5 percent tax.¹⁹

However, despite such measures, the effort to absorb and control the function of farmers' markets by the state-run store network was not a success. This failure was mainly because the state-run commerce network could not acquire enough farm produce and industrial goods to satisfy the demand of residents. As a result, rice and industrial goods were traded more secretly, and prices in farmers' markets rose to higher levels.

The North Korean authorities finally permitted the sale of rice at marketplaces in September 2002 and the sale of industrial products in December.²⁰ Also, in March 2003, the farmers' markets that existed in each of Pyongyang's districts were expanded into "general markets" that also could sell industrial products.²¹

North Korea changed its view on the function of the markets²² when it accepted

¹⁷ This fact was also proven in South Korea's site verification of food distribution in 2003. All food supplies, regardless of whether they had been given as loans or grants, were distributed at a price of 46 won per kilogram. Ministry of Unification (2003, 2).

¹⁸ *Yonhap News* (19 March 2002).

¹⁹ Shin Ji-ho (2003, 10).

²⁰ North Korea's establishment of general markets and its permission to distribute industrial products was revealed by the *Choson Shinbo* of 10 April 2003 and the *Korean Central News Agency* of 10 June 2003. However, those reports did not describe how the industrial products were distributed.

²¹ In this respect, it can be said that the general markets are the result of North Korea's failure to scale down marketplaces and to regularize the state's distribution system. However, when one considers the operation of the general markets, it is apparent that rather than giving up bureaucratic control, North Korea instead moved to expand and recognize the market functions. Just because North Korea reorganized farmers' markets into general markets does not mean that it is introducing a market economy. Instead, the reorganization is more an effort to supplement and reform the economy's internal operation while maintaining the socialist planned economy's basic structure.

²² The regime stated that "markets are another form of goods distribution" and "while socialism is followed, the function of the market should not be neglected" (*Choson Shinbo*, 16 June 2003).

them as a part of the socialist distribution system rather than as subjects for regulation.²³ The authorities also showed the intent to link the markets through economic reform.²⁴ In that respect, North Korea's July 1 Reform was actually "economic reform" measures.

North Korea's policy toward general markets, unlike the former policy toward farmers' markets, is one that promotes the markets' development. North Korean authorities have urged companies to supply more goods to the general markets. North Korea has even held lotteries to select shops in the general market that will be jointly owned and operated as direct sales stores for trading companies.

In addition, the North Korean government has used market principles to increase fiscal revenue, for example, by receiving "market usage fees" that vary with sales.²⁵ It has used general markets not only to sell surplus goods, but also to satisfy the rapidly increasing demand for goods following the measures of the July 1 Economic Reform.²⁶ General markets, which have taken the form of large supermarkets, are helping to create a new atmosphere in North Korean commercial distribution, along with the sales stalls, product display stands, and bars that have appeared on Pyongyang's main street.²⁷

b. Advent of Individual Sales Stalls

After the July 1 Reform, mobile sales stalls have appeared in the streets of Pyongyang and other large cities. A new fixed sales stall that is a container type and is operated by the People's Welfare General Office has appeared on Tongil Street in Pyongyang.²⁸ The stall sells roasted chestnuts and baked sweet potatoes

²³ "The state does not view markets as a subject for regulation but recognizes them as a part of socialist goods distribution. In Pyongyang, the 'farmers' markets' in each district are now called 'markets.' They were renamed to reflect the trade in various industrial products besides agricultural goods" (*Choson Shinbo*, 1 April 2003)

²⁴ "As shown by the creation of general markets, economic reform in the People's Republic of Korea is characterized by decisive and flexible policy" (*Choson Shinbo*, 16 June 2003). "Because we are new to operating markets, we are trying to receive help from other countries, including training of specialists and implementing their experiences" (*Korean Central News Agency*, 10 June 2003).

²⁵ *Joongang Daily*, 26 June 2003.

²⁶ Internal report for Ministry of Unification. *This Year's Changes in Operation of Farmers' Markets* (unpublished) 3.

²⁷ *Yonhap News* (2 October 2003).

²⁸ "Competing through Quality—Popular Roasted Chestnut and Sweet Potato Stalls," *Choson Sinbo* (27 February 2002).

for 150 won and 50 won per kilogram.²⁹ Mobile sales stalls have existed since 1970, but their introduction was intermittent because of the authorities' regulations. While the original stalls were simple mobile structures covered with fabric, the new stalls are reportedly modified containers that have signs attached to them. To save costs, the stoves are said to use coal instead of electricity.

It can be said that the sales stall business is part of an attempt to earn profit and to reform economic management methods to fit changing conditions following the changes of 1 July. The business aims to discard the supplier-centered sales method of the past that used the official sales network and to integrate the business process, from acquisition of raw materials to sale, with the goal of earning a profit.

c. Limiting liquidity in the Distribution Market

After the July 1 Reform, North Korea took measures to limit the increase of liquidity and to invest the returned funds in economic development. In response to the inflation that followed the economic reform measures, the authorities issued People's Subsistence Bonds,³⁰ collected liquidity, and released money in higher denominations, such as 1,000 won, to deal with the surge in demand for money that resulted from the rise in prices and wages. Until then, the highest monetary unit had been the 500-won note.

In addition, with the approval of the Cabinet, banks can now create currency circulation and loan plans every quarter. By adjusting the flows of liquidity, they can manage price levels through the amount of currency in circulation.³¹

Meanwhile, changes are being made to external transaction methods. The North Korean authorities stated that, from 1 December 2002, they would switch from the dollar to the euro as the unit of external transaction and would forbid the use of dollars within the country. However, considering that dollars are still being exchanged at currency exchange centers, this measure does not seem to have succeeded. After the July 1 Reform, "Cooperative Exchange Centers" were

²⁹ The Rak Yon Joint Venture Company, under the authority of the People's Subsistence General Office, is becoming known as a very profitable enterprise, with sixteen stalls on Pyongyang's Tongil Street employing housewives to sell baked sweet potatoes. Because all of the profits, with the exception of a "company profit charge," a type of corporate tax, are shared by the employees, morale is also said to have improved. *Joongang Ilbo* (29 April 2003).

³⁰ "Regarding People's Subsistence Bonds in the Democratic People's Republic of Korea—Cabinet Publicity," *Rodong Sinmun* (29 March 2003).

³¹ *Choson Shinbo* interview with Choi Hong-kyu, Director of State Planning Committee, *Joongang Ilbo* (2 April 2003).

established in each district of Pyongyang to manage foreign currency exchange. The Cooperative Exchange Centers sold the dollar at the black-market rate of 890–960 won, and one of its purposes was to collect foreign currency held by the public.³²

On 27 March 2003, when North Korea announced its “Liquidation of the 2002 State Budget and Report on the 2003 State Budget,” it also announced that it would issue People’s Bonds. The bonds were issued for the purpose of “effectively mobilizing and using free currency.”³³ The People’s Subsistence Bonds are valid from 1 May 2003 to late April 2013; they are issued in 500-, 1,000-, and 5,000-won units. They were sold for three months from May to July 2003,³⁴ thereby “creating temporary People’s Bond committees in each city and *kun*; placing a People’s Bond board under its authority; and creating Bond Assistance boards for every institution, enterprise, *li eup* (village), *ku* (county), and *dong* (province) office.”³⁵ This statement means that rather than recommending voluntary sale of bonds, organizations responsible for bond sales were created to determine the bonds’ allocation.

The principal of a People’s Bond is repaid on maturity, as well as a prize amount that is determined by lottery. Lotteries are held every six months during the first two years, and then once a year thereafter. Starting from December 2008, principal on bonds that are not selected in the lottery will be returned every year, depending on the state budget, upon their maturity. Thus, the bonds do not earn interest and are redeemed by returning the principal and any lottery winnings.³⁶ The lottery winnings are divided into seven levels, with the first-place winner for a 1,000-won bond winning 50,000 won; second place, 25,000 won; third place, 10,000 won; fourth place, 5,000 won; fifth place, 4,000 won; sixth place, 3,000 won; and seventh place, 2,000 won. Winnings for 500-won bonds are half those of the 1,000-won bonds, and winnings for 5,000-won bonds are five times that amount.

The reason that People’s Bonds were issued was probably to restrict the liquidity surge that followed the July 1 Economic Reform and to use the collected

³² *Yonhap News* (29 June 2003).

³³ North Korea stated in an official cabinet report that “People’s Subsistence Bonds are a form of state credit that is guaranteed by the state, and they were issued to develop a strong and prosperous country and to improve the welfare of citizens.” *Rodong Shinmun* (2 March 2003).

³⁴ Although the bond issue period was originally three months, Korean Central TV station reported on 18 August that bond sales were continuing, thus confirming that the period of bond sales had been extended. Korean Central TV station (18 August 2003).

³⁵ *Rodong Shinmun* (29 March 2003).

³⁶ *Choson Shinbo* (7 May 2003).

funds for economic development. This policy of issuing bonds and collecting liquidity to cope with the inflation following the July 1 Reform appears to be based on the monetary economics theory that can be found in any capitalist economics textbook.

d. Change in the Materials Distribution System

The State Materials Supply Committee undertakes the procurement and supply of materials in North Korea under the authority of the Alternative Enterprise System. Since the July 1 Economic Reform, North Korea has followed the central authority's materials supply plan while introducing a system of adjustments for a surplus or shortage of raw materials and components by permitting trade with enterprises and factories.³⁷

2. Current Challenges: Weakened Commercial Distribution and Worsened Inflation

North Korea's socialist commercial distribution system was started after liberation and during the reform process that created state-run and cooperative group commerce. With the socialist transformation of farm village management and of private commerce and industry, North Korea's commercial distribution came under full control of the state. In the 1990s, however, with the collapse of the international socialist market and with North Korea's worsening economic depression, the socialist commerce and distribution function gradually weakened, while private commerce, which focused on farmers' markets, expanded. State control over commercial distribution has rapidly weakened, and the private economy is rising to become a vast sector in the economy.

The state distribution system has practically collapsed, and North Korea is undergoing a shortage of food and daily necessities. Therefore, as households depend more on farmers' markets for daily necessities, the planned economy is splitting into a planned economy sector and a private economy sector.

Because of the split in the distribution system, a major change is occurring in the economic activity and spending pattern of North Korean citizens. With the effective termination of the low-price distribution system, citizens had to turn to marketplaces to acquire the food and necessities they had formerly received

³⁷ "Regarding the reform and completion of socialist economic management to build a strong and prosperous country" (Kim Jong-il's October 3 Guidelines, 3 October 2001 in Rodong Shinmun).

from the government.³⁸ In addition, to accommodate the increase in household spending, most North Korean households have had to work side jobs, large or small, in the market.

As shown in Table 7-3, North Korea is unable to resolve its chronic shortage of goods in its state-run stores despite the July 1 Economic Reform, and prices in marketplaces continue to rise.

Table 7-3. Prices in Pyongyang's Farmers' Market

Product	February 2002	Official(1 July 2002)	Price February 2003
Rice (kg)	48–55 won	44 won	130–150 won
Corn (kg)	20–32 won	24 won	75–85 won
Soybeans (kg)	60–70 won	40 won	180–190 won
Cooking Oil (kg)	160–200 won	150 won	600–650 won
Eggs (1 egg)	10–13 won	8 won	22–25 won
Fish (1 fish)	100 won	25 won	300–400 won
Pork (kg)	160–180 won	180 won	360–380 won
Sugar (kg)	130–150 won	100 won	400–420 won
Gasoline (kg)	130–150 won	—	330–350 won
Light Oil (kg)	80–100 won	—	280–300 won
Cigarettes (domestic)	45–50 won	—	70–80 won
Haircut	5–10 won	10 won	15–20 won
Exchange Rate (dollar)	220 won	150 won	670 won

Source: Authors, from interviews with North Korean defectors.

Although wages, along with prices, were steeply raised in the July 1 economic measures, few workplaces are currently able to pay proper wages. Although the food shortage has abated somewhat, supply is still scarce, resulting in worsened inflation and lowered purchasing power for citizens, as well as in a widened income disparity.

Although the rise in government procurement prices for farm products was an incentive for producers to distribute farm produce through the state distribution system, North Korea needs more supplies, such as chemical fertilizer, pesticides, and water pumps, plus development in the industrial sector for agri-

³⁸ It was recently confirmed that South Korea's rice assistance was distributed at marketplaces, and North Korean authorities also stated in early August 2003 that South Korean rice was distributed to workers at key enterprises such as the Musan Joint Mining Enterprise and the Kimchaek Joint Steel Enterprise (in Chongjin) in North Hamkyon Province at the price of 46 won per kilogram, 2 won higher than the price of North Korean rice).

cultural output to increase. Therefore, the state distribution system is currently unable to supply adequate amounts of food.

C. Outlook

1. Changes in Income Caused by Market Transactions

The North Korean authorities seem to have adopted a concept of “market” that is far more progressive than the existing socialist definition. This understanding seems similar to that of the Chinese Communist Party in 1983 when the party decided that it was possible for a socialist planned economy to coexist with a market economy. However, North Korea’s recognition of market functions is currently limited to the consumer goods market in the distribution sector. Nonetheless, this recognition may promote increased production by inducing citizens to raise their income through market transactions.³⁹

2. Greater Price Determination by Enterprises

If North Korea continues to expand and strengthen the reformed price system created in the July 1 Economic Reform so it balances prices among goods,⁴⁰ official prices will start to lose their significance, and enterprises will have more discretion to set the prices of their products. Although the state is not likely to give up its price-setting authority,⁴¹ it may try to adjust the price of goods to supply and demand conditions.

³⁹ In this regard, not only general citizens but also North Korean economic officials have been heard as saying they should “contribute to the people and State by succeeding at commerce.” *Joongang Ilbo* (26 June 2003).

⁴⁰ In 1998, when North Korea was reforming its socialist constitution, it had already emphasized that after prices of goods were determined, they were standardized, rigid, and restricting. That determination caused a discrepancy between the value and price of a good, and it hindered efforts to accurately evaluate how plans were carried out or to create and execute rational economic policies. In particular, as the food and energy shortage further worsened North Korea’s shortage of materials, normal distribution according to official prices declined while black-market transactions surged, causing so much disorder in the price system that proper economic management was difficult. As a result, the authorities stated that “normal business should allow prices to be raised or lowered when needed according to supply and demand, and the quality of the goods.”

⁴¹ North Korea’s State Price Enactment Office stated, “Although prices may be adjusted in the future to reflect supply and demand, suppliers cannot adjust them as they please. In our system, prices are determined by the central and local administrations, and the prices do not simply follow market forces.” *Choson Shinbo* (26 July 2002).

3. Institutionalization of the Unofficial Distribution Market

The Economic Reform Measures, by adjusting official prices to real conditions, have led to more normalized goods production, which may invigorate the distribution market. Because the prices of necessities such as food, shelter, and clothing have been raised to reflect their production costs, the higher income of the producers may give them an incentive to work harder. Distribution of goods may increase as the gap between the official and farmers' market prices narrows.

To stimulate transactions in the distribution market, marketplaces will need to be promoted because the state-run distribution network is insufficient to supply goods, despite the July 1 Economic Reform. Therefore, it is likely that measures will be taken to recognize the unofficial marketplaces as official distribution markets.

4. Reform of the Distribution Market and North Korea's Economic Reform

Along with the changes in the operation of North Korea's farmers' markets, the effort to introduce "markets" as a part of economic reform seems to be aimed toward expanding the supply and distribution of goods to ensure the success of the July 1 Economic Reform. However, changing the name of farmers' markets, or creating general markets, is not enough to establish a market economy. Thus, North Korea will probably maintain the basis of its socialist planned economy while continuing to supplement and reform internal economic management and operation systems.⁴²

Nonetheless, the changes in the distribution market have made North Korea realize that more decisive reform measures are needed in the distribution sector and have spurred domestic economic reform. The following tangible and intangible events may occur as a result:

- First, North Korean citizens may discover how to efficiently spend their higher incomes. In particular, North Koreans working in commerce are likely to discover new ways to raise their incomes.⁴³

⁴² Ministry of Unification, *Weekly North Korean Trends* (6–12 June 2003).

⁴³ The following case may be cited: "When sweet potatoes were rationed in the past, they were distributed in bulk through the commerce network, which resulted in many of them rotting or losing their taste due to improper storage. Now, however, sales stalls are being created that can buy just the amount they need to sell as baked sweet potatoes for a profit." North Korean tour guide's explanation of the baked sweet potato stalls in the streets of Pyongyang, during a visit to North Korea to attend the "South–North Joint Document Exhibition on the Illegality of Japan's Forced Capture of Koreans" in February 2003.

- Second, with the state no longer supplying necessities at minimal prices and with the ability to spend their income freely, North Koreans will probably acquire more efficient household spending habits. Furthermore, with the establishment of a more materialistic wage system, labor productivity is likely to increase as workers have more incentives.

- Third, with the invigoration of North Korea's distribution market, companies are likely to make more cash transactions among themselves rather than noncash transactions. In particular, companies that are jointly owned or managed by foreigners will probably be the first to use cash transactions. If companies use cash for their exchanges, they will be able to use some of the cash to buy materials. This would promote the market mechanism in the production sector through the distribution sector.

D. Conclusion

North Korea's July 1 Economic Reforms included decentralizing the planned economy, normalizing the price function, increasing purchasing power by raising wages, and expanding the independence of enterprises. This policy is not a return to a planned economy, but the adoption of some market economy practices while preserving the basic principles of a planned economy.

Although such reform measures are inconsistent with price liberalization, which is the core of a market economy, the measures are significant because they attempted to normalize the existing system of socialist planned prices and to resolve the extreme disorder in prices. As shown by reforms in Eastern European countries, this normalization is an essential step toward price liberalization. Although it is unclear whether North Korea will actually adopt price reform measures, the country is expected to work toward efficient goods and currency distribution. Although the North Korean state will not give up its authority to set prices,⁴⁴ it will try to adjust the prices of goods to fit supply and demand.

Overall, the North Korean distribution sector is expected to make positive developments. Above all, the July 1 Reform will likely result in increased production of goods by adjusting of fiscal prices to more realistic levels. The raising of the price of food, shelter, and clothing to reflect production costs is especially expected to provide producers with higher incomes and more incentive to work.

⁴⁴ North Korea's State Price Enactment Office stated: "Although prices may be adjusted in the future to reflect supply and demand conditions, suppliers cannot adjust them as they please. In our system, prices are determined by the central and local administrations, and the prices do not simply follow market forces." *Choson Shinbo* (26 July 2002).

Also, with the narrowed gap between official prices and farmers' market prices, goods distribution will become more efficient.⁴⁵

However, there is a chance that the vicious cycle of inflation will continue because the production and supply of daily necessities has not increased after the economic measures. Although this increase may be an inevitable side effect of price rationalization and currency restrictions, the success of the July 1 Economic Reform ultimately depends on whether the government can improve its ability to supply goods.

References

In Korean

- Korea Institute for International Economic Policy. 2003. "Commerce and Distribution System." *North Korea Development Report 2002*, pp. 306-28.
- Ministry of Unification. 2003. *Results of Site Verification of First Stage of Distribution of 2003 Food Loan*. Seoul: Ministry of Unification. (9 October)
- _____. *Weekly North Korean Trends*. Seoul: Ministry of Unification, Various issues.
- Korean Workers' Party Press. 1983. *Kim Il-sung Selected Works*, vol. 23. Pyongyang: Korean Workers' Party Publishing.
- North Korean Academy of Social Science. 1985. *Dictionary of Economics*, Vol. 1, Vol. 2. Pyongyang: Social Sciences Publication.
- Shin Ji-ho, "The North Korean Economy after the July 1 Reform." Korea Development Institute, *KDI North Korean Economic Review* vol. 5, no. 7, 2003
- Choson Shinbo*. 16 June 2003.
- _____. 7 May 2003.
- _____. 1 April 2003
- _____. 26 July 2002.
- _____. 27 February 2002
- Korean Central News Agency*. 10 June 2003
- Joongang Ilbo*. 26 June 2003.
- _____. 29 April 2003.

⁴⁵ In the past, the state could not supply enough rice, and citizens had to depend on farmers' markets because stores lacked food. Now many citizens have returned to buying from state-run stores, many of which supply food, including chicken and eggs. As a result, citizens do not frequent the farmers' markets as much as they formerly did, except to buy certain goods.

- _____. 2 April 2003
- Rodong Shinmun*. 24 August 2003
- _____. 29 March 2003.
- _____. 2 March 2003
- Yonhap News*. 2 October 2003.
- _____. 29 June 2003.
- _____. 19 March 2002.

Chapter 8

The Defense Industry

A. Characteristics of North Korea's Defense Industry

1. Economic Policies and the Defense Industry

North Korea's defense industry is in line with its basic economic policy of building a self-sufficient socialist economy that is focused on heavy industries. The economic system of North Korea is modeled after the traditional Soviet economic system. Although most East European countries following this system have modified it for application to their own economies, North Korea has adhered to the original Soviet system.

North Korea's basic roadmap for its economic policy is the concurrent pursuit of economic development and militarization. Pyongyang places priority on heavy industry as a means of realizing this objective. North Korea first adopted this strategy of parallel economic development and national defense in December 1962. As ideological conflicts in the Communist sphere and as border disputes between the Soviet Union and China intensified, Kim Il-sung focused on national defense and emphasized the strengthening of military power. Since then, North Korea has sought to strengthen its military force, even at the cost of delaying economic development.

The basic idea behind North Korea's economic policy is that there is "no military power without development of heavy industry." In spite of the recent improvements in relations with South Korea and the rest of the world, North Korea has shown no changes in its attitude toward strengthening its military power, building up its defense industry, and preparing for a future war.¹

2. The Status of the Defense Industry in North Korea

The armed forces of North Korea are considered to be an essential tool for the socialist revolution and hold a central role in forming the economic foundation that will preserve the regime. One of the most important factors that contributed to North Korea's economic crisis is considered to be the priority placed on the defense industry that is part of the country's industrialization policy. The failure of North Korea's heavy industry, which resulted largely from the excessive emphasis placed on the nonproductive defense industry, led to the paralysis of other economic sectors.

North Korea encouraged the development of the defense industry by asserting that such development "is completely in line with the interests of the society and the people" under the socialist system. Kim Il-sung, when addressing the Korean Workers' Party Representatives Conference in October 1966, ordered listeners to "stockpile necessary goods, fortify militarily strategic areas, develop the defense industry, and be ready in peacetime in order to rapidly shift the economy to the wartime system in order to continue production during a war."²

In this context, North Korea's policy as described by Kim Il-sung for its defense industry centered on the following priorities: (a) self-sufficiency for military tools and materials, (b) research and development of military tools and materials, (c) strategic positioning of defense industry facilities, (d) construction of an underground system of defense facilities, (e) preparation of a transition system for wartime, and (f) stockpiles of strategic goods.³

North Korea's defense industry takes up 30 percent of the total national production, surpassing the total production of civilian industries. The disproportionate size of the defense industry in the North Korean economy can be further emphasized by considering that in the Soviet Union, the defense industry was responsible for 8 percent of the total national production.⁴ This fact means that the defense industry, which takes up more than 50 percent of the North Korean economy, is a core foundation of the North Korean heavy industry and is a major source of foreign revenue. Yet, its inefficient management, contrary to the principles of a market economy, has made the defense industry a large economic burden; in the event the Koreans are reunified, defense spending is expected to be a big barrier, not only to the creation of a unified defense industry

¹ Choi Seok-awan (2001, 6–7).

² See the Korea Central Intelligence Agency (1979, 263).

³ Kim Young-kyu (1990, 66).

⁴ Trivenko (1992, 116).

but also to the overall economy.⁵

3. The Policy of North Korea's Defense Industry

After completing postwar reconstruction through the Three-Year Plan (1954–1956) and the Five-Year Plan (1957–1960) following the truce agreement, North Korea continued to strengthen its military while implementing its First Seven-Year Plan (1961–1970), Six-Year Plan (1971–1976), second Seven-Year Plan (1978–1984), and third Seven-Year Plan (1987–1993) at the same time that it pursued a parallel policy of developing the economy and the national defense sector. The armaments reinforcement in North Korea in the 1960s was defensive in nature, but after 1970, the focus shifted to offensive capabilities.⁶ North Korea maintained its offensive armaments reinforcements, with the most intensive developments taking place in the 1980s and 1990s.

“The Current Situation and Our Party’s Work,” Kim Il-sung’s report at the Korean Workers’ Party Representatives Conference in October 1966 most comprehensively laid out the policy on the defense industry, including the production of combat equipment, combat technology, and general military goods.

The North Korean policies for the defense industry according to basic goals described earlier were to be realized by constructing defense industry facilities and extending existing facilities, increasing military goods, breaking away from external dependency for munitions and arms, increasing the reserves of strategic tools and materials, and formulating wartime production plans for major industrial facilities.

The major policies of the defense industry were implemented by North Korea in recent years and were (a) the development of advanced equipment and electronic equipment, (b) the development of weapons suitable for the North Korean geography and environment, (c) the production of arms and equipment for guerilla warfare and the invasion of South Korea, (d) the production of chemical and biological weapons, and (e) the development of missile and nuclear weapons programs.⁷

North Korea has invested heavily in heavy industry and focuses on developing a means of production in accordance with the principles of extension and reproduction under the overall plan of the “construction of a socialist economy.” Investment has also been heavy in the defense industry to make the develop-

⁵ Lee Sang-kyun (1999, 22–26).

⁶ Kim Chul-wan (1993, 243–46).

⁷ Kim Young-kyu (1990, 66).

ment of national defense concurrent with the development of the economy. Consequently, light industry, especially consumer goods production, is extremely underdeveloped, and this imbalance in development between heavy and light industries has led to the chronic depression of infrastructure industries such as energy and transportation.

The North Korean policy directed at developing the defense industry and strengthening the military force has met its anticipated objectives, but the socialist theory of economic development asserted by North Korea—that “the development of heavy industry improves light industry, agriculture, and the living standard of people”—has been clearly shown to be a fallacy.⁸

However, Kim Il-sung’s emphasis on military strength and independence since the middle of 1960s has contributed greatly to advancing North Korean military power in spite of the difficulties of the overall economy.

B. The Process of Development and the Current Status of North Korea’s Defense Industry

1. The Process of Development of North Korea’s Defense Industry

Before and after the Korean War, North Korea attempted to establish a fundamental basis for heavy industry through the Five-Year Plan (1957–1961), and it put its efforts into developing heavy industry focusing on the defense industry through the first Seven-Year Plan (1961–1967).

a. Period of Establishment (1950s)

North Korea began to restore the foundations of its decimated defense industry through the Three-Year Plan (1954–1956) right after the truce agreement. During the Five-Year Plan (1957–1961), it began to assemble and produce basic military arms, such as small weapons and ammunitions, through a license agreement with the Soviet Union. By that time, the country had constructed nineteen weapon factories, including one in Kanggye—the largest small-weapons factory.

b. Period of Expansion (1960s)

During the first Seven-Year Plan (1961–1967), North Korea mostly produced

⁸ Kim Chul-whan (1993, 260).

traditional basic weapons, small torpedo speedboats, high-speed patrol ships, and small patrol ships through mass-production systems licensed from or imitating the Soviet Union and China.

c. Period of Mass Production (1970s)

During the Six-Year Plan (1971–1976), North Korea expanded its mass-production systems to all fields except for aviation, and it established independent capabilities.

d. Period of High-Tech and Precision Weapons Development (1980s)

During the second Seven-Year Plan (1978–1984), North Korea pursued independence, modernization, and economic development, and it focused on the mass-production of high-tech and precision weapons.

e. Period of Strategic Weapons Development (1990s)

During this period, after establishing a mass-production system for core traditional weapons, North Korea invested heavily on developing strategic weapons such as nuclear and mid- and long-range missiles.

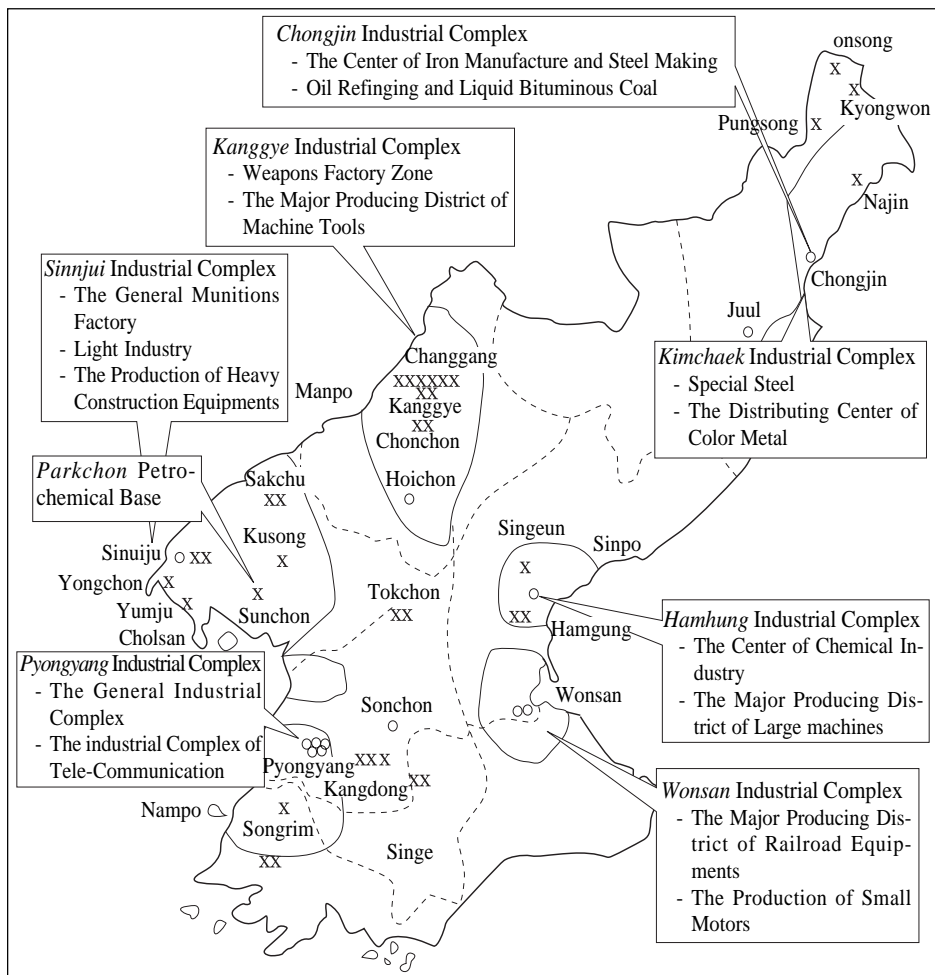
2. The Current Status of North Korea's Defense Industry

a. The Location of the North Korean Defense Industry

North Korea's defense industry was influenced by the nation's policy of positioning facilities on the basis of principles of military tactics and strategies rather than production efficiency. As a result, general industrial facilities became located next to arms factories. A good example is the Kanggye Industrial Complex, which contains defense industry facilities, as well as major production facilities for machine tools. Kanggye is located in an administrative district of the Jagang Province, a mountainous zone in central North Korea. The factories producing AK-47 automatic rifles and many types of ammunitions and bombshells were constructed in that area, plus a group of general industrial factories, including the Hoichon Machine Tool Factory, the February 16 Factory, the Kanggye Tractor Factory, the Aprokgang Tire Factory, and the September Textile Factory, were constructed mostly underground to ensure that production was maintained in wartime. The 50,000-square-meter Kanggye Textile Factory was built underground in 1978.

The known location of munitions factories in North Korea is shown in Figure 8-1. Most of the weapon production factories are in the Kanggye Industrial Complex while general munitions factories are concentrated in the Sinuiju Industrial Complex. Other defense industry facilities are located throughout other industrial areas, and it is assumed that this selected distribution is based on anticipated wartime demand. The industrial areas and facilities of the defense industry are located in two major economic spheres: the Pyongyang, Pakchon, Sinuiju, and Kanggye industrial areas belong to the Western economic sphere, while the Chongjin, Kimchaek, Hamhung, and Wonsan industrial areas are located in the Eastern economic sphere.

Figure 8-1. The Locations of the Munitions Factories in North Korea



Source: North Korea Institute (1983, 1575) and Yu Kil-jae (2002, 247).

b. North Korea's Conventional Weapons Production Capability

Despite some shortcomings, the defense industry in North Korea has reached the level of advanced nations owing to the support of a strong, centralized economic management system and technical support from the Soviet Union. Another reason for the strong development—despite the difficulties posed by the overall North Korean economy—is the development of an export-oriented system of weapons production and an active weapons export policy.

It is estimated that, as of 2000, about 180 munitions factories were in North Korea, as shown in Table 8-1, including 44 specialized factories and 136 parts factories. Since the late 1960s, North Korea has designated more than 100 general factories employing a large number of workers as wartime transition factories. Therefore, it is estimated that the total number of factories with munitions production capabilities, including unidentified factories, is more than 300.

Table 8-1. The Number of North Korea's Munitions Factories

Division	Total	Specialized Production	Parts and Repairs
Guns and Cannons	43	8	35
Armored Vehicles	12	2	10
Shipyard	12	2	10
Aircraft	9	2	7
Guided Weapons	8	5	3
Ammunition	55	19	36
Electronic Communications	14	6	8
Biochemicals	16	0	16
Other Munitions	11	0	11
Total	180	44	136

Source: Yu Kil-jae (2000, 247).

Those arms factories serve as the core of the North Korean economy. The Second Economy Committee under the National Defense Commission manages the planning, production, distribution, and export of all the munitions produced. The committee is composed of the Support Department and the General Department, plus seven departments for machinery production, including the first Department (conventional small firearms and ammunition); the second Department (tanks and armored vehicles); the third Department (development and production of cannons, anti-air guns, self-propelled guns, and multiwarhead rocket launchers); the fourth Department (missiles); the fifth Department (nuclear and biochemical weapons); the sixth Department (naval munitions, including warships and submarines); and the seventh Department (communications equip-

ment and aircraft).

North Korea named the factories with numbers or jargon to disguise their nature. About 100 factories for civilian goods can be converted into arms production factories. It is known that practically all medium and large factories in North Korea have facilities and systems to convert them into military production factories.

Jungmoowon is North Korea's administrative committee and is closely related to the party and armed forces; it wields powerful political power and influence. After Kim Il-sung emphasized the need for developing the defense industry at the second Workers' Party General Meeting in 1966, the second Department of Machine Industry was formed under the National Administrative Committee and was later renamed the Second Economic Committee in 1971. The Ministry of the People's Armed Forces, which produces key military goods and repairs weapons, works closely with the Second Economic Committee.

The munitions factories in North Korea were mostly constructed before the 1990s using production systems introduced from the Soviet Union. The economic difficulties currently facing North Korea prevent it from expanding its facilities, but maintenance and repair of existing facilities have continued through the 1990s. Clearly, North Korea can resurrect its Russian support at any time to repair its facilities and equipment and to stabilize its defense industry.

North Korea's annual arms production capacity is estimated at 218,000 units of small weapons, 2,000 units of anti-armor vehicle weapons, 87,000 units of ground ammunition, 8 units of submarines, and 24 units of torpedo speedboats. North Korea operated an assembly factory for training planes and helicopters until the 1980s. It has successfully assembled and produced two MIG-29 aircrafts with Soviet technology, while producing the AN-2 aircraft. However, it cannot currently produce any more MIG-29s because the supply of parts from Russia has stopped. North Korea assembles guided weapons, including surface-to-surface, surface-to-air, surface-to-vessel, and vessel-to-vessel, with an estimated annual production capability of more than 1,200 missiles.

c. The Current Status of Development of Strategic Weapons in North Korea

(1) *Missiles.* North Korea established a special unit to test and evaluate missiles in 1983, its first ground-to-ground missile unit in 1985, and a Scud-B regiment unit under the Fourth Corps in 1988. It currently has a missile brigade positioned 50 km north of the demilitarized zone (DMZ).

North Korea has made significant progress in researching, developing, placing, and exporting missiles during the past few years.⁹ The country has made rapid technical progress in making and launching ICBM missiles that can target the

American continent and in exporting them to countries hostile to the United States.¹⁰ It is entirely possible for North Korea to export its Taep'o-dong no. 2 to Iran, Iraq, Pakistan, Libya, and Egypt. The country has already exchanged nuclear and missile technologies with Pakistan and many other countries. It is evident that North Korea should be considered an active exporter of ballistic missiles and ballistic missile technology.¹¹

North Korea has at least four missile factories: the 26th Factory, located in Kanggye city, Jagang Province, produces relevant parts; the 118th factory in Kagamri, Kaechon-gun, Pyungnam Province, produces blast-off engines; the 125th Factory in Pyongyang city Junggyedong, Hyungjaesan area, assembles missiles; and the Yakjon factory in Pyungang city, Mankyungdaeri, produces explosives. One North Korean defector recently described a missile factory in Nampo city, Kangseo area. Considering that most of North Korea's first-level factories maintain almost the same scale of military equipment, some experts believe that there may be more than eight missile factories in North Korea.

It is estimated that North Korea's annual production capacity for Scud-Bs is 8–12 units a month, or about a 100 units annually. For Scud-Cs, it is 4–8 units a month. The total number of missiles in North Korea is believed to be about 500. Nonetheless, the actual scale of North Korea's missile capabilities has been kept a secret, so it is possible to surmise only by analyzing information gathered from various channels. According to the U.S. Defense Intelligence Agency, North Korea produces 4–5 units of Scud-B and Scud-C missiles a month. According to the Chronicle of Korean Military Defense, it produces 100 units of Scud missiles annually. Therefore, it is reasonable to expect that North Korea may possess several hundred missiles, including 120 Scud-Bs and 180 Scud-Cs. In May 1997, three No-dong 1-hos were identified in positions near the DMZ, and seven heads were found near Pyongyang.¹²

The international connections relating to the development of ballistic missiles in North Korea are illustrated in Figure 8-2.

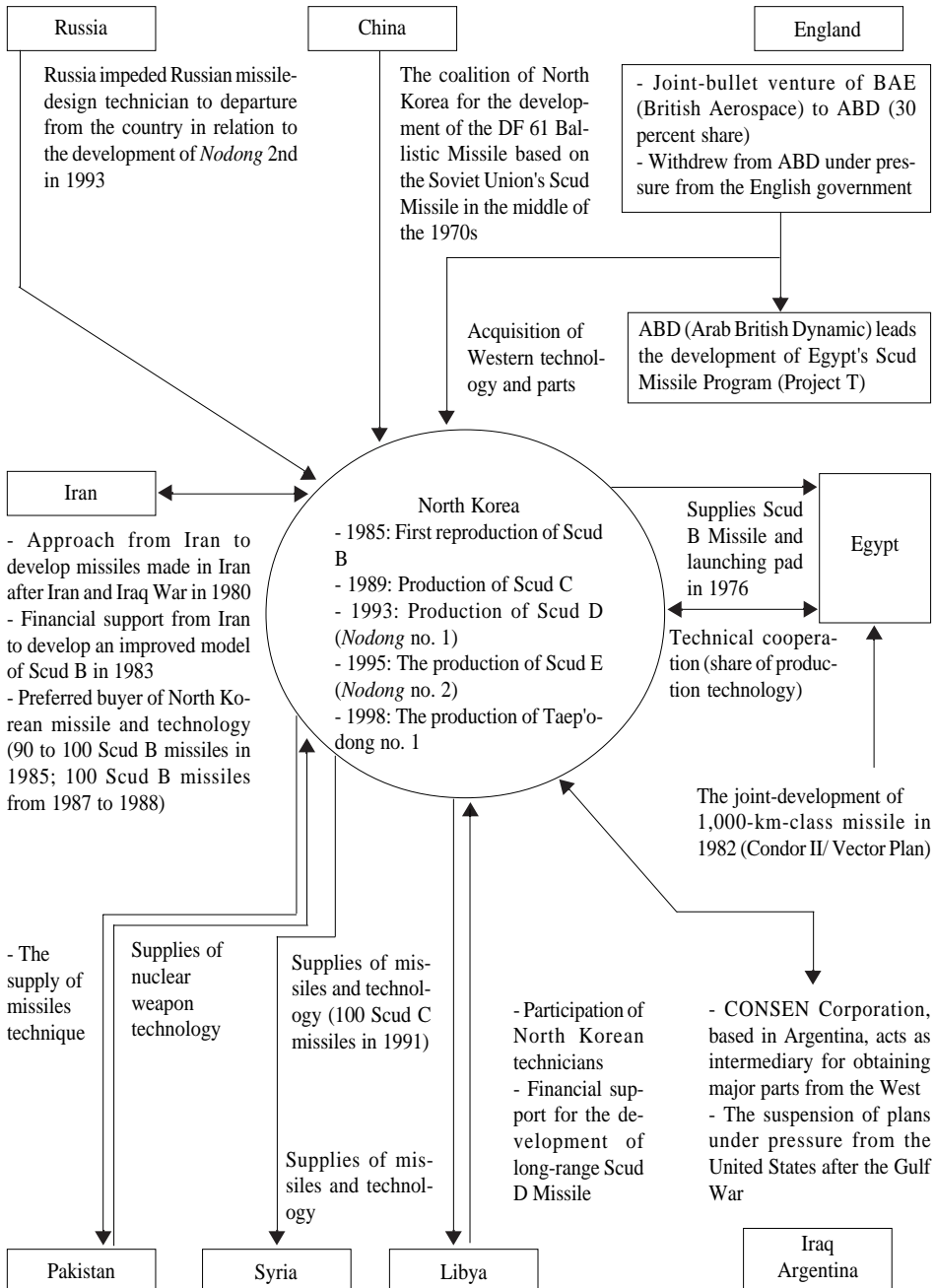
⁹ Park Jong-chul (2001, 17).

¹⁰ See *Yonhap News* (31 October 2002).

¹¹ See *Chosun Ilbo* (28 November 2002).

¹² Park Yeon-sung (1999, 70).

Figure 8-2. International Connections Relating to the Development of Ballistic Missiles in North Korea



Sources: The information is drawn from the following references: Institute of Foreign Affairs and National Security, “The Development of North Korean Ballistic Missile and Japan’s Conception on TMD” (1993); Joseph S. Bermudez’s testimony on the current situation of China’s and North Korea’s ballistic missile proliferation at the U.S. House of Representatives; and contents of the press conference by Donald Rumsfeld, U.S. secretary of defense, on 26 November 2002.

The statistics and characteristics of the missiles produced and owned by North Korea are summarized in Table 8-2:

Table 8-2. DPRK Ballistic Missile Characteristics

Class	Name (alternate names)	Max. (km)	Warhead (kg)	Stages (m)	Length (m)	Diameter (tons)	Weight IOC	DPRK
SRBM	SA-2	60–160	190	2	10.7		2.3	1976
	DF-61	600	1,000	1	9.0		6.0	—
	Scud-B	300	1,000	1	11.2		5.9	1981
	Scud Mod. A	300	1,000	1	11.2		5.9	1984
	Scud Mod. B	320–340	1,000	1	11.2	0.5–1.0	5.9	1985
	Scud Mod. C	500	770	1	11.3	0.5–1.0	5.9	1989
MRBM	No-dong 1	1,350–1,500	700–1,200	1	16.0	0.7–4	16.3	1993
	Taep’o-dong 1	2,500	700–1,000	2	25.5	1–4	20.7	1998
IRBM	Taep’o-dong 1 SLV	4,000	50–100	3	26.0	1–4	18.7	1998
ICBM	Taep’o-dong 2	6,700	700–1,000	2	32	1–4	64.3	2000
	Taep’o-dong 3 (Three-stage Taep’o-dong 2)	10,000–12,000	500–1,000	3		1–4		

Source: Joseph S. Bermudez Jr., *A History of Ballistic Missile Development in the DPRK*, Monterey, CA: Monterey Institute of International Studies, (1999, 27–28).

- Notes: 1. Information of North Korea’s 1,350-km missile range is based on the analysis of information about Iran’s SHEHAB, with a 1,200-kg warhead, and information about Pakistan’s GHOURI, with a 700-kg warhead and a 1,500-km range.
2. Korean Ministry of Defense first estimated that it was about 1,500–2,000 km.
3. The Taep’o-dong 2 missile (three-stage propulsion) is estimated to have a maximum range of 15,000 km, according to CIA analysis.

Assuming that North Korea maintains its present productive capacity, it is predicted that within three to four years and at least by the year 2010, the country will be able to develop ICBM missiles with warheads that are nuclear, biochemical, or both that can reach the continental United States. The actual timing may be subject to change, according to multinational negotiations regarding the nuclear issue.

(2) *Chemical Weapons.* North Korea began manufacturing chemical weap-

ons in the early 1960s and has had mass-production capabilities since the 1980s. In the 1980s, North Korea spurred the development and production of offensive chemical weapons, which it began to produce and stockpile for emergencies. The country furthered the development of large-scale delivery and discharge methods using trench mortar, field artillery, radiating artillery, rockets, and so on. North Korea reportedly possesses six types of chemical weapons including nerve, hermetic, emetic, suffocative, and bulla. In the 1990s, the country made advancements in its efforts to improve its chemical warfare delivery system by successfully developing the dual chemical warhead. North Korea is currently considered to be in third place after the United States and Russia in its capability to execute biochemical warfare.¹³

It is believed that North Korea has eight production facilities located in Sinuiju, Manpo, Aoji, Chongjin, Kanggae, Hamhung, Anju, and Sunchon; six stockpile facilities are located in Sanumri, Whangchon, Sariwon, Samsandong, Wangjaebong, and Shinansangri; and four chemical research facilities are located in Sinuiju, Hungnam, Kanggye, and one other location. The chemical weapons production and research facilities are all located to the north of Pyongyang and Wonsan, while the stockpile facilities are located to the south of that area so that they may be immediately mobilized for emergency.

North Korea's biochemical weapons program is managed separate from the general defense industry. It is extremely difficult to estimate the exact volume of production because the location of the production and storage facilities and their production volume are all top-secret information.

(3) *Biological Weapons.* Biochemical weapons research and development are conducted by the Bio-Chemical Weapon Institute under the Defense Science Academy and the Micro-Organism Research Center of the Military Medicine School. North Korea is known to have developed and to currently have in its possession ten different bio-weapons, such as the anthrax virus, and various delivery methods, such as trench mortar, field artillery, and missiles (Scud, Frog, No-dong, etc.). Chemical units are distributed up to the regiment level.¹⁴

North Korea's bio-weapon production system is believed to have enough facilities to support the production of bio-weapon materials such as anthrax, cholera, and pest virus.¹⁵ The country completed live experiments by the end of

¹³ Kim Hee-dong (2002).

¹⁴ Kim Hee-dong (2002).

¹⁵ See *Yonhap News* (19 March 2002).

1980 and has three production facilities (in Jungjoo, Pyungbuk, and elsewhere) for culturing thirteen types of viruses, such as anthrax, pest, smallpox, and yellow fever. Thus it joins the ranks of Iraq, Russia, and France as holders of a secret cache of the smallpox virus, according to U.S. analysis.¹⁶

North Korea has six bio-weapon research facilities and three production facilities, such as the 25th Facility in North Pyongan, the Hanchon Factory in Mooncheon, and one on unnamed islands in the Western Sea.

(4) *Nuclear Weapons.* North Korea has made special efforts to develop nuclear weapons that will accomplish its three goals of strengthening military power, promoting economic growth, and securing international influence. On the basis of all the available information, the necessary 10–12 kg of reprocessed plutonium was apparently acquired before the 1994 Geneva Nuclear Agreement between the United States and North Korea. In addition, it was also ascertained that North Korea has all the reprocessing technologies needed for acquiring plutonium. Intelligence agencies such as the U.S. CIA and Japanese intelligence believe that North Korea may have acquired a maximum of 40 kg of plutonium.¹⁷

North Korea's ability to acquire materials for nuclear weapons is illustrated clearly in Table 8-3. The core materials for building nuclear weapons are high enriched uranium (HEU), plutonium, beryllium, and high explosives (HE). It may be safe to assume that North Korea has an advanced nuclear weapons capability, considering that it has independently conducted all necessary procedures for the design, manufacture, and maintenance of nuclear weapons.

Table 8-3. The Current Status of Nuclear Weapons Materials in North Korea

Function	Constituting Materials	Preserving Materials in North Korea
Nuclear Fuel	UNat, HEU	UNat
Nuclear Warhead Materials	Pu-239 (90% ↑), HEU-235 (90% ↑)	Pu-239 (94% ↑), HEU-235 (90% ↑)
Reflectors	UNat, DU (U-238), Th-232	UNat
Moderators	Be-9, B-10, HP Graphite	HP Graphite
High Explosives	High-speed explosives/high-pressure explosives	HMX, RDX, PETN
Neutron	Po-210, Ra-226, Cf-252, Am-244	Po-210, Ra-226, Pu+Be
Trigger Device	Internal explosion device	PBX, HE Lens, EED/EBW

Source: Sin Seong-taeck (2000, 29).

¹⁶ See *Yonhap News* (5 November 2002).

¹⁷ See Kim Hee-dong (2002).

It is known that North Korea has twenty-two nuclear facilities in eighteen different sites, including a uranium mine, uranium refinement facilities, nuclear materials facilities, nuclear power plants, reprocessing facilities, and research facilities. But it is unlikely that it has the technology to make accurate and micro-sized nuclear mechanisms. One can assume that any nuclear bombs the country may be able to produce will weigh more than two to three tons even if it develops nuclear explosion technology.

North Korea recently announced that it would give up its nuclear weapons program, but there is no clear evidence to support that announcement. It is likely that North Korea will make its decision for total cessation or limited development pending the outcome of multinational agreements regarding North Korea's nuclear issue.

C. Problems and Future Direction of North Korea's Defense Industry

1. The Problems of North Korea's Defense Industry.

As already discussed, the industrial policy of the North Korean regime is based on developing heavy industry, with a focus on the defense industry. There are a number of problems with this policy. First, heavy industry in North Korea has become awkwardly large, causing an imbalance of the North Korean industrial structure. The share of heavy industry in the total industrial production gradually increased from 40 percent in 1963 to 70 percent in 1990.

Second, the excessive orientation toward heavy industry has led to the underdevelopment of the agriculture and light industry sectors, resulting in the serious imbalance of the industrial structure, and the consumer goods production sector has fallen far behind. This imbalance is considered to be a major cause of the economic depression in North Korea.¹⁸

Third, in a system of military economy, which emphasizes the production of short-term and visible military goods to strengthen the military power, the need to invest in infrastructure to reinforce the overall economy becomes less crucial because of the large amount of money it would require and the relatively long-term results it would yield. Investment in construction, maintenance, and infrastructure repair is also ignored for the sake of military strategy because infrastructure like roads and harbors could be used by the enemy in a military encounter.

¹⁸ Jeong Yu-jin (1995, 92–93).

Moreover, under the principle of self-sufficient economic development in North Korea, which aims to maximize total social efficiency rather than economic efficiency, North Korea reduced the necessity for infrastructure such as roads by placing production facilities close to the resources, and it pursued the development of regional economies with the goal of securing raw materials to be used for production within that region.¹⁹

Fourth, with little foreign trade in other sectors, the defense industry has become an important source of foreign currency for North Korea. As in the case with Russia, arms industries are particularly resistant to privatization.

Fifth, the defense industry in North Korea is strictly isolated from the other sectors. This isolationism has hindered the spread of advanced technology from the defense industry to other sectors. North Korea has focused only on the general technology aspects of science, and it lacks the human resources to drive the development of highly sophisticated sciences, pure theory, and advanced science. The quality of products in heavy chemical industries—except for some areas related to weapons development—is low and less competitive in the international market.²⁰

North Korea will continue to invest in its defense industry as a means of maintaining political stability, acquiring foreign capital for military power, and transforming the country into a market economy. This investment is expected to cause several problems.

First, international financial institutions and foreign investors will never support North Korea unless it reforms its economic system for economic recovery.²¹ For example, North Korea desperately needs long-term, low-interest financing from international financial institutions such as the International Monetary Fund, the International Bank for Reconstruction and Development, the International Development Association, and the Asian Development Bank. North Korea needs to come off the blacklist of terrorist nations to secure the approval of the United States and Japan so it can become a member of those institutions. If North Korea continues to develop nuclear weapons, there will be no financial support from the outside, and its economy will continue to deteriorate.

Second, North Korea will receive no foreign investment as long as military tensions with neighboring countries continue. After China's affiliation with the World Trade Organization, foreign investment will move into the Chinese market for the time being, making it more difficult for North Korea to receive any financial support from foreign countries.

¹⁹ Sin Yong-do (2000, 435).

²⁰ Choi Seok-hwan (2001, 11–12).

²¹ Choi Seok-hwan (2001, 11–12).

Third, the economic embargo against North Korea, which was lifted after the South–North summit talks on 15 June 2000, will be reinstated if North Korea continues to refuse inspections for weapons of mass destruction (WMD) and traditional negotiation for weapon reduction, especially in light of North Korea’s acknowledgment of its nuclear weapons development program and its withdrawal from the Nuclear Non-Proliferation Treaty. Since 11 September 2001, the United States has included North Korea in its list of nations supporting terrorism, and has attempted to impose political, military, and economic restrictions in order to establish some transparency over North Korea’s possession of WMD.

Fourth, North Korea’s economy will be bankrupt if the country continues to invest in only its defense industry without the influx of finance and technology because the national industrial structure will be destroyed from lack of resources.

Fifth, if North Korea continues to show no change in attitude, South Korea’s engagement policy toward North Korea will face serious criticism from conservative groups in the South, making it that much more difficult for North Korea to receive economic support and cooperation from South Korea.

Consequently, North Korea should change its attitude toward its defense industry, which is negatively affecting the nation’s chances for economic recovery and development. It is very important for South Korea to play a central role in changing North Korea’s attitude and in making the North reform its industrial system through economic cooperation.

2. The Future Direction of North Korea’s Defense Industry.

North Korea seems likely to continue its weapons development to achieve military, political, and economic gains through a “brinkmanship strategy” against the West. In spite of the severe economic difficulty in the 1990s, North Korea increased its military power and focused on developing strategic weapons such as conventional weapons, biochemical weapons, nuclear weapons, and missile technology. The priority for its resource allocation, which is not related to its economic principle, can be summarized in a speech by Kim Jong-il: “Even though economic conditions are bad and it is becoming burdensome, the national defense force must be strengthened at any cost.”²² The priority placed on the military sector by Kim Jong-il can also be ascertained from a statement that he made during talks with the chief executive officers of the South Korean media companies: “My power [sic] come from military power.... If we want to be friendly with foreign

²² See *Pyongyang Broadcasting* (3 July 1997) and cited in *Home and Foreign Communication*, no. 1089 (25 December 1997).

countries, military force is required and the power for foreign relationships comes from military power, and my power also comes out of the military power. Even if we have a good relationship with other countries, we should have military power.”²³

In accordance with his instructions, many national goods and resources are allocated to the military and the defense industry.²⁴ According to the White Paper on the National Defense for 2000, North Korea is spending more than 30 percent of its GNP and 48–53 percent of its total annual budget on military expenditure. It has been reported that the second economic sector related to the defense industry in the Party Central Military Committee was transferred to the National Defense Commission after 1998.²⁵ Exercising his control and command over the military and arms sector, Kim Jong-il, as the supreme commander of the People’s Army and the chairman of the National Defense Commission, emphasized that North Korea has to produce and supply the necessary materials and facilities to the defense industry before it addresses the needs of the overall economy. As a result, the national policy is still heavily oriented toward investing in the defense industry.

According to the White Paper on National Defense for 2000, the North Korean military had about 1.17 million soldiers in 1999 with an additional 7.48 million reserves for emergency mobilization. This means that more than 8.65 million people in North Korea, or about 40 percent of the total population (about 22.08 million in 1999), are affiliated with the military. Compared to the number of German troops mobilized during World War II, which was about 13.8 percent of the total population, the scale of North Korea’s military is unprecedented in world history. The vast amount of resources, capital, and labor—which should be invested in economic recovery—is not being productively used in North Korea. As long as North Korea maintains its military-oriented policy, the inefficiency of its economy will only intensify.

The North Korean military purchased \$105.63 million worth of weapons from seven countries, including Russia and Kazakhstan, for the five-year period ending in 2000. The weapons purchased included forty MIG-29 fighters, known to be the best fighters to come out of the former Soviet bloc. North Korea also purchased five MI-8 helicopters and forty MIG-21 fighters from Russia and Kazakhstan, totaling \$12 million in 1999, and it has expanded its weapon imports every year since.²⁶ These purchases occurred when North Korea’s food and energy shortage

²³ See *Joongang Ilbo* (14 August 2000).

²⁴ The medical aid group from France, *Medecins Sans Frontieres*, decided to withdraw from North Korea, blaming that many of the relief goods supplied to North Korea, including food, were given first to the higher class, the military, the munitions factories, and the factories for export. See *Chosun Ilbo* (2 October 1998).

²⁵ Kim Keun-sik (2001, 38).

²⁶ Jeong Yu-jin (1999, 56).

was at its peak. The people's hardship was totally neglected while the government concentrated all its resources on expanding its military power.

It is reported that the North Korean's armed forces have focused on improving their combat capabilities following the West Sea Fight in June 1999. Even after the summit meetings between South and North Korea in 1999, the armed forces more than doubled the scale of their training, focusing on mechanized troops and infiltration training, and the level of their training was the highest it had been in ten years.²⁷ The basic reason behind Kim Jong-il's emphasis on military power and the development of conventional and asymmetrical strategic weapons in spite of the severe economic difficulties it would bring is that a strong military force is considered the best measure for securing the regime in a hostile environment. North Korea is expected to focus on the development of WMD to attain export competitiveness and to gain an advantage in negotiations with the West. North Korea is also expected to accelerate its biochemical weapons development because biochemical weapons are cheap, easy to develop, and more fearsome to hostile nations.²⁸

References

In Korean

- Baeck Hwan-ki. June 1996. "The Present Condition and Prospect of North Korean Defense Industry." *National Defense*.
- Choi Seok-hwan. 2001. "The Studies on the Prospect of the North Korean Defense Industry and the Direction of the South–North Korean Exchange and Cooperation." M.A. thesis at the Korean National Defense University, Seoul.
- Hwang Jin-hwan. 1998. "The Basis of Defense Power and Defense Industry of North Korea." *The Security and Arms Control of Korea in the Age of Cooperative Security*. Chapter 5. Seoul: Bong Myung Publication.
- Im Kang-taek. 2000. *The Analysis on Effectiveness That North Korean Defense Industry Policy Influences upon Economy*. Seoul: Institute of Unification.
- Jeong Young-tae. 1995. "The Defense Industry in North Korea and the Prospect of the Conversion to Private Demand." *The Unified Economy*. Seoul: Hyundai Economic Research Institute.
- Jeong Yu-jin. 1997. "The Reason of the Armaments Enlargement in North Korea during Post–Cold War." *The Research and Studies on North Korea* 1, no. 1.

²⁷ See *Chosun Ilbo* (10 October 2000).

²⁸ Choi Seok-hwan (2001, 46–47).

- _____. 1999. "The Situation and Management of North Korean Defense Industry." *The Research and Studies on North Korea* 3, no. 1.
- Kim Chul-whan. 1990a. "The Science and Technology Level in North Korea." *Sindonga*. Seoul: Dong-A Ilbo.
- _____. 1990b. *The Studies on the Current Situation of the External Cooperation in North Korea's Science and Technology Sector*. Seoul: Korea Institute for National Unification.
- _____. 1993. "The Real Condition of North Korean Defense Industry and the Possibility of Transition to Civilian Demand Industry." *A Collection of Articles on North Korea and Unification Studies in 1993 (IV): The Sector of the North Korean Military*. Seoul: Ministry of Unification.
- _____. March 2000. "Comment on the Department of North Korean Party Defense Manufacturing Industry." *National Unification*.
- _____. 2001. *The Studies on the Plan for Efficiency of Science and Technology and Human Resource Exchange*. Seoul: Science and Technology Policy Institute.
- Kim Hee-dong. 2002. *An Analysis and Response on Weapons of Mass Destruction of North Korea*. M.A. thesis at the Korea National Defense University, Seoul.
- Kim Young-kyu. 1990. *North Korean Defense Industry and Weapon System*. Seoul: Institute for Far East Asia.
- Korea Central Intelligence Agency (KCIA). 1979. *Kim Il-Sung's Military Strategy*. Seoul: KCIA.
- Lee Sang-kyun. 1999. "The Diagnosis of Profitability on North Korean Defense Industry and the Application Scheme in the Period of South and North Korean Integration." *The Research Report on the National Defense Policy*. Ministry of National Defense. 2000. *The White Paper on the National Defense*. Seoul: Ministry of National Defense.
- Naeyoi-Broadcasting. No. 1089 (25 December 1997).
- Chosun Ilbo*. 1998. "North Korea Relief Good Run Out to the Military and Military Authorities." (2 October)
- North Korea Institute. 1983. *Pukhanchongram*. Seoul: North Korea Institute.
- Park Sam-seok. 2001. *The Analysis of Game Theory on the Possibility of North Korean Economic Reform*. Seoul: Bank of Korea.
- Sin Seong-taek. 2000. "The Current Situation of North Korean Nuclear Development and the Direction of Our Country's Confrontation." *Strategy Study*, no. 29. Seoul: Korea Research Institute for Strategy.
- Sin Yong-do. 2000. "The Studies on the North Korean Military and Economy." *Neighboring Countries of Korean Peninsula and Security Policy in North Korea in 2000s*. Seoul: Korea National Defense University.

Trivenko, Marina. 1992. "North Korean Industry." *The Current Situation and Prospect of North Korean Economy*. Seoul: North Korean Economy Institute and Korea Economic Newspaper.

Yu Kil-jae. 2002. *The Studies on the Open Economic Policy of DPRK Military*. Seoul: Korea National Defense University.

In English

Bermudez, Joseph S. Jr. 1999. *A History of Ballistic Missile Development in the OPRK*. Monterey, CA: Monterey Institute of International Studies.(CNS Occasional Papers #2).

Part III

International Economic Activities

Chapter 9

Foreign Economic Relations

A. Foreign Trade

1. Current Status of Foreign Trade

The level of North Korean foreign trade has decreased consistently since the 1990s as a result of the disintegration of the Soviet bloc and of North Korea's own internal economic crisis. In 1998, North Korea's level of foreign trade plummeted to \$1.442 billion, the lowest since 1990. However, it started to rise in 1999, and the influx of foreign currency from the international community grew through increased foreign aid, increased production, and the Mt. Kuangang tourism project.

The level of foreign trade in 2002 was \$2.26 billion, a 0.4 percent decrease from the year before. (See Figure 9-1.) This was the first year since 1999 that the level of foreign trade decreased.¹ Exports, which have been increasing since 1999, brought in \$735 million in 2002, a 13.1 percent increase over the year before. Main exports (in order of largest to smallest) include machine products, textile products, machinery and other electronic products, nonmetal minerals, processed chemical products, and agricultural goods. The increase in exports in 2002 was mainly due to the increased production capacity resulting from years of focused efforts to normalize the major export industries. Another important contributing factor was the enthusiastic participation of various organizations,

¹ KOTRA (2003).

Involving factories and companies, in the effort to acquire foreign currency, this effort was spurred by the July 1 Economic Reform. A third reason for the increased exports was the concerted effort to expand foreign trade in order to gain foreign currency for obtaining the necessary energy resources and food supplies that were lacking with the decrease in international aid at that time. The majority of exports were primary or light industrial products, and at present, North Korea has no export products with a comparative advantage in the international market.

Table 9-1. Trends in North Korean Foreign Trade

(units: \$1 million, percent)

	Export		Import		Total	
	Amount	Rate of Increase %	Amount	Rate of Increase %	Amount	Rate of Increase %
1990	1,733	—	2,437	—	4,170	—
1991	945	-45.5	1,639	-32.7	2,584	-38.0
1992	933	-1.3	1,622	-1.0	2,555	1.1
1993	990	6.1	1,656	2.1	2,646	3.6
1994	858	-13.3	1,242	-25.0	2,100	-20.6
1995	736	-14.2	1,316	6.0	2,052	-2.3
1996	727	1.2	1,250	-5.0	1,977	-3.7
1997	905	24.5	1,272	1.8	2,177	10.1
1998	559	-38.2	883	-30.6	1,442	-33.8
1999	515	7.9	965	9.3	1,480	2.6
2000	556	8.0	1,413	46.4	1,969	33.0
2001	650	14.9	1,620	15.2	2,270	2.6
2002	735	13.1	1,525	-5.9	2,260	-0.4
2003	777	5.5	1,614	5.9	2,391	5.8

Source: KOTRA and the Ministry of Unification.

The amount of imports in 2002 was about \$1.525 billion, a 5.9 percent decrease from the previous year. (See Table 9-1.) This decrease was the first in imports in four years. Main imports include energy resources, food, machinery and electronic products, textile products, and processed chemical products. With the exception of energy resources and meat products, the amount of imports for all those products decreased from the previous year. The main reasons for this decrease were the decrease in grain imports following the improvement of North Korea's food situation and the decrease in subsidized imports of strategic goods from China.

Overall, export levels increased over 2001 levels, while the importation of products that make up the bulk of North Korean imports decreased significantly,

resulting in only a small decrease in the total level of foreign trade from the previous year. As a result, the foreign trade deficit has decreased from \$970 million in 2001 to \$790 million in 2002, but a trade deficit still remained.

An observation for North Korea's foreign trade levels in 2003 indicated that its foreign trade grew slowly as a result of the instability on the Korean peninsula that has been caused by the revelation of the North Korean nuclear development program and the increased pressures exerted by the international community. Foreign trade levels showed a 5.8 percent increase, amounting to \$2.39 billion.² Trade with Japan decreased owing to the nuclear crisis and the abduction of Japanese nationals, but trade with China increased significantly despite the SARS outbreak during the first half of the year. The increased trade with China has been considered the main reason for the increase in foreign trade levels. Also, with the increased emphasis on the practical applications of the July 1 Reform at production sites, the enthusiastic efforts of factories and companies to increase profits and gain foreign currency have had a positive effect on North Korea's external trade.

The amount of exports in 2003 was \$777 million, a 5.5 percent increase over the year before and the third consecutive increase in four years. Imports recorded \$1.61 billion, a 5.9 percent increase from the previous year.

2. Analysis of Main Exports and Imports

a. Export Products

North Korea's major export commodities, as previously mentioned, include marine products, textile products, machinery such as electronic goods, nonmetal minerals, agricultural goods, and processed chemical products. Notably, the proportion of marine and textile products was 56.2 percent in 2002, which shows that North Korea is concentrating on exporting light industrial goods and primary goods over the more profitable secondary or tertiary goods.

The first category of commodities whose export levels have increased is animal-based goods such as fish and other marine products.³ With \$261.11 million exported in 2002, a 64.9 percent increase over the previous year,⁴ those prod-

² KOTRA (2004).

³ KOTRA, pp. 14–16.

⁴ The commodities that contributed most to the North Korean export growth were marine commodities such as shellfish, crustaceans, and mollusks. Through their export to Japan and South Korea, those commodities have become one of North Korea's main sources of foreign currency, along with textile and electronic goods. While plant-based commodities (e.g., *songi* mushrooms, rice-straw,

ucts made up 35 percent of the total amount of exports. (See Table 9-2.) More than 90 percent of the marine products exported went to China and Japan. In particular, marine product exports to China have shown a dramatic increase since 2002. With this increase, the North Korean government has been concentrating its efforts on increasing fisheries and establishing large-scale seafood processing factories.

Table 9-2. North Korea's Main Export Products

(unit: \$1,000)

	2001		2002		Rate of Increase(%)
	Amount	Proportion(%)	Amount(%)	Proportion(%)	
Animal Products	158,359	24.3	261,106	35.5	64.9
Plant Products	42,029	6.5	27,481	3.7	-34.6
Mineral Products	50,464	7.8	69,814	9.5	38.3
Plastic and Chemicals	44,600	6.9	42,373	5.8	-5.0
Wood Products	5,596	0.9	10,166	1.4	81.7
Textile Products	140,530	21.6	123,061	16.7	-12.4
Precious Metals	14,077	2.2	14,556	2.0	3.4
Metalloids	60,245	9.3	57,400	7.8	-4.7
Machinery, Electronics	97,914	15.1	85,615	11.6	-12.6
Other	36,394	5.6	43,420	5.9	19.3
Total	650,208	100.0	734,992	100.0	13.0

Source: KOTRA.

The second main export category is mineral products, which recorded \$69.81 million in exports in 2002, a 38.3 percent increase over the previous year. Main importers include China (anthracite coal, iron ore, precious metal ore, and refined petroleum); Thailand (refined petroleum); and Japan (anthracite coal, magnesite, and natural sand). Of the mineral exports, 90 percent are to those three nations. One reason for the increase in the export of mineral products is that North Korea has been concentrating its efforts on expanding its production of mineral commodities by purchasing new mining equipments from overseas and by implementing improved mining methods. Another contributing factor is the significant increase in miners' wages, resulting from the July 1 Reform, which has led to a boost in productivity.

medicinal herbs) used to be important export commodities in 1994, contributing \$111.21 million to the total amount of exports, they showed a continuous decrease thereafter, making up only 3.7 percent of total exports in 2002 at \$27.48 million.

The third main export category is processed chemical goods and precious metals, which recorded exports of \$261.11 million in 2002. The export level of processed chemical goods has been increasing every year since 1998 and in 2002 reported a 24 percent rise over 2001. One reason for this increase is the thorough maintenance of factories and facilities already in existence and the establishment of new production plants and other related facilities since 2001. The export of precious metals at \$14.56 million in 2002 marked a 3.4 percent increase over the previous year. Most of the precious metal exports comprise gold ingots exported to Hong Kong and Belgian diamonds processed in North Korea.

There were also commodities whose exports decreased in 2002 from the previous year.⁵ First, the export of textile products, which had been one of North Korea's main exports, decreased significantly.⁶ The amount of textile exports in 2002 was \$123.06 million, a 12.4 percent decrease from the previous year. (See Table 9-2.) The direct cause for the decrease was the drop in the general level of exports to Japan, which had been the number one client for North Korea's textiles. Trade with Japan took a blow after North Korea officially admitted to the abduction of Japanese nationals during the Japan-North Korea summit meeting held in September 2002. This admission adversely affected Japan's public perception of North Korea.⁷ Another reason for the decrease was the decline in industrial production output and the weakening of transportation capacities arising from North Korea's internal energy crisis. North Korea's textile products thereby lost their competitive advantage over the products of competing nations, which further contributed to the decrease in the export of textile products.

Second, exports of machinery and electronic goods, at \$85.62 million decreased by 12.6 percent from the previous year. Machinery and electronic goods made up only 6.5 percent of the total exports in 1993. Yet a steady increasing

⁵ KOTRA (2003, 17–18).

⁶ In 1994, textile industry had developed into North Korea's number one export industry, with textile products making up about 23.2 percent of total exports. However, since 1995, the decrease in industrial output resulting from the energy and economic crises led to the decline of the textile industry's export level, as well as that of other industries. Despite such difficulties, the textile industry was North Korea's main way of gaining foreign currency, and because of North Korea's policy in the 1990s of encouraging the growth of light industries, the export of textile goods remained at about 20 percent of total exports. However, in 2002, only 16.7 percent of total exports were textile goods, leading to a further decrease in this commodity's relative importance.

⁷ Meanwhile, the increase of the export of processed textile products between North and South Korea since 1999 is considered to have played a part in the decrease of North Korean textile exports to Japan. Indeed, as North Korea's relationship with Japan deteriorated, a large proportion of North Korean products that were used for trade with Japan were transferred to trade with South Korea.

trend peaked in 2001, with those goods making up 15.1 percent of the year's total exports and becoming North Korea's third largest export industry. The reason for the comparatively higher growth rate of the machinery and electronics industry amid the difficult economic conditions was the increase in government efforts as part of a policy to develop the machinery and electronics industries as main export industries. The North Korean regime has been trying to change its export structure by developing high-profit export products. However, there was a significant drop in exports of machinery and electronic products to China, Hong Kong, and Japan in 2002. North Korea's 2002 export trends seem to have continued into 2003. The leading export commodities were marine products, iron goods, and mineral energy resources.

b. Imported Goods

North Korea's major imports include energy resources, food, machinery and electronic products, textile products, chemical products, and metalloids. In 2002, with the exception of energy resources and meat products, there was a decrease in the import of most of those major import products.⁸

In 2002, \$158.48 million of textile products were imported, a 22.3 percent decrease from the previous year. (See Table 9-3.) This decrease is attributed mainly to the lack of raw textile materials following the shrinking of North Korea's commission-based processing trade in the textile industry. One interesting trend was the significant decrease in food imports. The import of plant products, including grains, dramatically decreased by 46.4 percent from the previous year to \$118.41 million. This decrease was due to the significant decrease in assistance-based imports from China and Japan. Another reason for the decrease was that, although its food supply is still insufficient, North Korea has emerged from the worst of its food crisis and in 2002 imported 4.13 million tons of food, a 4.6 percent increase over the previous year. Other noteworthy imports were metalloid products, which showed a 12.1 percent decrease from the previous year to \$88.22 million, and machinery and electronic products, which decreased by 3.8 percent from the year before to \$234.67 million.⁹

⁸ KOTRA (2003, 20–22).

⁹ There was a consistent increase in electronics and machinery imports until 2002. If one examines product-by-product imports in this sector, the main import products were power generators and other machineries used for the maintenance and renovation of production facilities, as well as machineries for industrial infrastructure. Electronic imports focused on computers and related accessories, demonstrating the North Korean government's intention to develop its information technology industry.

Table 9-3. North Korea's Main Import Products

(unit: \$1,000)

	2001		2002		Rate of Increase(%)
	Amount	Proportion(%)	Amount(%)	Proportion(%)	
Animal Products	73,904	4.6	103,435	6.8	40
Plant Products	221,024	13.6	118,406	7.8	-46.4
Oil-Based and Crude Food Products	89,868	5.5	72,277	4.7	-19.6
Mineral-Based Products	231,100	14.3	235,908	15.5	2.1
Processed Chemical Products	123,403	7.6	122,110	8.0	-1.0
Plastic Goods	65,980	4.1	65,980	4.3	0.0
Textile Products	203,901	12.6	158,483	10.4	-22.3
Metalloids	100,355	6.2	88,224	5.8	-12.1
Machinery	243,826	15.0	234,673	15.4	-3.8
Automobile	88,427	5.5	76,051	5.0	-14.0
Other	178,504	11.0	249,849	16.4	40.0
Total	1,620,291	100.0	1,525,396	100.0	-5.9

Source: KOTRA.

Nonetheless, the import of mineral-based products increased dramatically in 2002 to \$235.91 million, a 2.1 percent increase over the previous year. (See Table 9-3.) Mineral products emerged as the largest imports for the year, surpassing machinery and electronic products. The main exporters included China, Russia, Singapore, Thailand, and Greece, with over 50 percent of the total mineral product imports coming from China. However, while the energy resources imported from China decreased in 2002, various energy resources were imported from Russia, resulting in a net increase in imports for energy resources. The increase in the import of various petroleum products from Russia is attributed to the revitalized talks on economic cooperation between the two countries following the North Korea-Russia summit meeting in August 2002; before then, there had been no trading of energy resources between North Korea and Russia since 1991.

As illustrated, imports were led by energy-producing, mineral-based products and meat products, while import levels in general, including that of food products, decreased in 2002. However, while import levels of electronics, textile products, and processed chemical goods continued to decrease in 2003, import levels for grains and light-industry goods-commodities that have a direct effect on the lives of the people-are believed to have increased. This increase can be interpreted as the central government's measure to minimize the shortage

of basic goods and food necessary for its citizens' lives following the July 1 initiative, which has strengthened market functions. Meanwhile, the import of mineral-based energy resources continued to increase in 2003; it is believed that increased industrial output has led to the increased demand for energy.

3. Trading Trends of North Korea's Main Trading Partners

The disintegration of the Soviet bloc caused major changes in North Korea's trading partnerships. First of all, trade with Russia, North Korea's number one trading partner, decreased drastically from 53 percent of North Korea's total trade in 1990 to 14 percent in 1991. The direct cause of this decrease was the November 1990 agreement between North Korea and Russia for all trade payments to be made in hard currency.¹⁰ Furthermore, international economic conditions made it impossible for Russia to continue to offer privileged prices to and maintain aid-based trade with North Korea. Russian companies in the private sector avoided trading with North Korea because the country lacked payment capabilities. Moreover, with the liberalization of the Russian economy and Russia's transformation into a market economy, North Korean products, which had long enjoyed protection from market forces, no longer had a competitive edge. Consequently, trading between North Korea and Russia gradually decreased during the 1990s. In 2002, trade between the two countries accounted for only 3.6 percent of North Korea's net trade.¹¹

This trend of decreasing trade applied not only to Russia but also to all ex-socialist nations. Even in 1990, trade with ex-socialist nations such as Russia, China, and various Eastern European countries made up around 70 percent of North Korea's total trade volume. But in 2000, this proportion decreased to only 30 percent. However, with the expansion of trade with South Korea, China, Japan, other Asian nations, and developed nations of the West, North Korea's trade dependency on capitalist nations has gradually increased. North Korea is enthusiastically supporting trade with capitalist nations so it could maintain the regime and rebuild its economy. Recently, there has been an increased effort at improving diplomatic relations with the West in order to stimulate trade. As a result of such efforts, North Korea's main trading partners since 1990 have in-

¹⁰ Another factor that decreased trade with Russia was the devaluation of the Russian ruble from 0.67 ruble to 1.65 ruble per U.S. dollar.

¹¹ However, in 2002, North Korea–Russia trade increased 18 percent from the previous year. That increase is considered to have been caused by the revitalization of economic cooperation on energy and railroad construction following the August 2002 summit between the two nations.

cluded mostly capitalist nations such as China, Germany, Hong Kong, India, Japan, Russia, Singapore, South Korea, and Thailand.

North Korea's 2002 trading trends by nation are as follows.¹² First, the number one trading partner in 2002 was China, constituting 32.7 percent of the total trade volume. (See Table 9-4.) Exports to China increased 62.4 percent over the previous year, yet imports from China decreased 18.1 percent, resulting in a small increase of 0.1 percent in the total trade volume (\$738.17 million). The main reason for the increase in exports was the loosened regulations on border-to-border trade, which led to the expansion of exports of marine and textile products, plus the volume of grain and mineral energy imports decreased, resulting in the decrease of the total import volume.

Table 9-4. North Korea's Ten Largest Trading Partners

(unit: \$1,000)

	Country	Exports from North Korea		Imports to North Korea		Total Trade Volume		Total Trade (%)	
		2001	2002	2001	2002	2001	2002	2001	2002
1	China	166,797	270,863	570,660	467,309	737,457	738,172	32.6	32.7
2	Japan	225,618	234,404	249,077	135,137	474,695	369,541	21.0	16.3
3	Thailand	24,098	44,616	105,964	171,966	130,062	216,582	5.8	9.6
4	India	3,060	4,768	154,793	186,573	157,853	191,341	7.0	8.5
5	Germany	22,756	27,799	82,077	140,418	104,833	168,217	4.6	7.4
6	Singapore	3,050	796	112,298	83,026	115,348	83,822	5.1	3.7
7	Russia	4,541	3,642	63,794	77,048	68,335	80,690	3.0	3.6
8	Hong Kong	39,794	21,940	42,555	29,169	80,529	51,109	3.6	2.3
9	The Netherlands	10,424	6,377	9,067	27,620	19,491	33,997	0.9	1.5
10	Bangladesh	37,701	32,267	1,275	490	38,976	32,757	1.7	1.4
Total volume of trade of all ten trading partners		536,019	642,472	1,391,560	1,318,756	1,927,579	1,966,228	85.3	87.0
Total volume of trade with all nations		650,208	734,992	1,620,291	1,525,396	2,270,499	2,260,388	100.0	100.0

Source: KOTRA.

Note: Ten largest trading partners, according to 2002 figures.

Second, trade with Japan decreased. Exports to Japan in 2002 totaled \$234.4 million, a 3.9 percent increase over the previous year, while imports from Japan totaled \$135.14 million, a 45.7 percent decrease from the year before. (See Table

¹² KOTRA (2003, 5–11).

9-4.) Hence, the total trade volume with Japan was \$369.54 million, a 22.2 percent decrease from the previous year. Trade with Japan dropped to 16.3 percent of the total trade, which was the first time since 1990 that it dropped below 20 percent of the total trade volume. The decrease in trade between the two countries was mainly attributed to the deteriorating North Korea-Japan relations, resulting from the nuclear crisis and the abduction of Japanese nationals. In addition, Japan's internal economic problems and the financial crisis of companies affiliated with the *Jochongryun* (Association of North Korean Residents in Japan) are also considered to have contributed to the decrease in trade with North Korea.

The third notable trend was the increase in trade with other Asian nations. Even excluding China and Japan, the majority of the top ten trading partners of North Korea in 2002 were Asian nations such as Thailand (third), India (fourth), Singapore (sixth), Hong Kong (eighth), and Bangladesh (tenth). In particular, trade with Thailand showed a significant increase. After a visit to Thailand by Kim Young-nam, chairman of the Supreme People's Assembly, economic cooperation was strengthened between the two nations, and 200,000 tons of rice were imported from Thailand.

The fourth trend was the consistent increase in trade with European Union (EU) nations. Trade with EU nations showed a 10.9 percent increase over the previous year, standing at \$4,347.69 million. Exports decreased by 19.8 percent to \$65.03 million, but imports increased by 21.6 percent to \$282.66 million. The increase in trade with EU nations started in 2000. The expansion in economic exchange was positively affected by North Korea's normalization of relations with EU nations.

B. Attracting Foreign Capital and Foreign Economic Cooperation

1. Attracting Foreign Capital

North Korea began to actively promote foreign investment through the enactment of the Marger Law in September 1984, but the results have been disappointing. Between 1991 and 2002, the total influx of foreign investment rested at an estimated \$460 million,¹³ most of which came from *Jochongryun*-affiliated companies, South Korean companies, and ethnic Chinese companies/

¹³ UNCTAD (2003, 251).

the amount of investment from Western companies was negligible.

North Korea's performance in attracting foreign capital was extremely disappointing in comparison not only to that of China, which has promoted economic reform since the late 1970s, but also to that of Vietnam, which began promoting foreign investment later than North Korea. (See Table 9-5.) The difference was that China and Vietnam concentrated on improving relations with the United States and other Western nations. Furthermore, liberalization was accompanied by systematic reform, producing positive outcomes favorable to inducing foreign investment. North Korea, however, has still been unable to normalize relations with the United States because of nuclear and missile issues. Moreover, North Korea has pursued only a limited liberalization policy, ignoring the need for systematic reform. Those factors have been pointed out as the main causes of North Korea's weak performance in attracting foreign capital.

Table 9-5. Foreign Investment Trends in North Korea, China, and Vietnam

(unit: \$1 million)

	North Korea ²	China	Vietnam
1991–1996 ¹	24	25,476	1,217
1997	307	44,237	2,587
1998	31	43,751	1,700
1999	–15	40,319	1,484
2000	5	40,772	1,289
2001	–24	46,846	1,300
2002	12	52,700	1,200

Source: UNCTAD (2003, 251).

Note: 1. Annual average.

2. Estimated figures.

It would not be inaccurate to say that foreign investment in North Korea is not determined by economic necessity but is instead motivated by political reasons. The following three trends support this observation.

First is the essential role played by businesses owned by overseas Koreans. For example, because an overwhelming majority of the investment from Japan comes from Jocheongryun-based companies, this investment could accurately be described as a North Korea-to-North Korea economic exchange. Most of China's investment in North Korea, which expanded after the 1990s, comes from ethnic Korean businesses in China's Yeonbyun area. Also, South Korean firms are interested in investing in North Korea for reasons of kinship and nationhood, and not as a simple expression of interest in the North Korean market on the basis of the country's investment conditions. This state of affairs is advocated by North

Korea/ investment from overseas Korean businesses may be interpreted as North Korea's own capital under the banner of building an autonomous national economy.

Second, there has recently been a consistent increase in Chinese and overseas Chinese (Chinese living abroad) investment. Generally, overseas Chinese investors prefer to invest in real estate and the financial market rather than in the manufacturing industry. This trend is not an exception in North Korea/ most investment by overseas Chinese is geared toward real estate and the financial market. Overseas Chinese investors started showing an interest in the North Korean market after the handover of Hong Kong to China in July 1997, and North Korea has been actively promoting Chinese and overseas Chinese investments since 1999.

Third, American and Japanese firms are cautiously preparing to invest in North Korea. Investment from the United States is closely tied to the easing of U.S. economic sanctions, and investment from Japan is closely related to establishing diplomatic relations between Japan and North Korea and to the outcome of demands by North Korea for colonial reparations.

Ultimately, to attract future foreign investments, North Korea must make changes to its basic investment condition in the following areas: (a) finding a resolution of the Japanese colonial reparation issue and normalizing diplomatic relations with Japan, (b) finding a resolution of the North Korean nuclear crisis, (c) normalizing relations with the United States and lifting economic sanctions, and (d) making a public declaration for liberalization and reform. Without such fundamental changes, foreign investment in North Korea will not be able to take the form of economic participation that is based on the principles of a market economy/ rather it will be limited to aid-based investment or developmental aid, such as farming cooperation, or to development of tourism and other service industries or construction of infrastructure in limited areas. Those types of investments may bring a short-term increase of foreign currency but will not be of much help in the fundamental revitalization of the North Korean economy.

2. Foreign Economic Cooperation

The North Korean government's goal for foreign economic activities in 2002 was to create a firm export production basis, increase exports, and improve trade relations and expand economic cooperative projects.¹⁴ However, the external

¹⁴ Refer to the business report by Prime Minister Hong Song-nam, presented at the Supreme People's Assembly on 27 March 2002.

economic conditions for North Korea had worsened since the previous year because the nuclear crisis caused relations with the United States to deteriorate, making it extremely difficult for North Korea to pursue its goals.

Relations between the United States and North Korea went into a downward spiral after President George W. Bush's State of the Union speech in January 2000, in which North Korea was included in the "Axis of Evil." The relationship worsened further after a North Korean official admitted the continuation of the nuclear development program during a visit by Assistant Secretary of State James Kelly in October 2002. The United States stopped providing North Korea with crude oil in November, and relations between the two hit rock bottom in December, when North Korea announced its plans to resume its nuclear weapons program and to pull out of the Geneva Accord.

Relations between Japan and North Korea were expected to improve after the very first summit meeting between the two nations in September 2002 and the signing of the Pyongyang Accord, which comprised four articles, including one that provided for economic cooperation. However, with North Korea's confirmation during the summit that it had abducted Japanese nationals, Japanese public opinion turned sour. Additional strain was caused by the nuclear crisis, worsening the relationship between the two countries. Despite the results of the summit meeting, no progress was made on the normalization of relations or the expansion of economic exchange.

China is North Korea's most important trading partner. In 2002, North Korea focused its efforts on increasing trade, receiving economic aid, and promoting cooperative projects with China. Most notably, in April 2002, in commemoration of President Kim Il-sung's ninetieth birthday, North Korea received 50 million yuan (about \$6 million) worth of gratuitous economic aid from China. Other developments included the establishment of a North Korea-China joint venture company called the Morning Panda Joint-Venture Computer Company in September 2002, and the visit to China by North Korean trade representatives, headed by the deputy trade minister, in October 2002. Economic exchange between North Korea and China has thus been progressing relatively smoothly.

The most notable development in North Korea's foreign economic relations in 2002 concerned the country's relationship with Russia. Relations between the two nations made dramatic progress after Kim Jong-il's visit to Russia for a summit meeting with President Vladimir Putin in August 2002. Other developments included a visit to the Far Eastern Federal District of Russia by North Korean economic representatives in April; visits to North Korea by Konstantin Pulikovskiy, the Russian president's special representative to the Far Eastern Federal District in February and April; top-level talks between the ministers of foreign affairs in May; and the Russian railway minister's visit to North Korea

in October. Various issues for economic cooperation were actively discussed, including a project to connect the Trans-Korean Railroad (TKR) and the Trans-Siberian Railroad (TSR).¹⁵

Several very important developments have taken place in North Korea's foreign economic cooperation policies, despite the worsening conditions such as the increased pressure from the United States. First, North Korea has been pursuing an active economic liberalization policy, represented by establishing special economic zones—specifically, the Sinuiju Special Administrative District in September, the Mt. Kungang Special Tourism Zone in October, and the Kaesong Industrial Complex in November. This policy can be assessed as the North Korean government's expression of enthusiastic support for economic liberalization.

Second, North Korea's economic diplomacy activities, which were centered on dispatching economic envoys, have been vigorously pursued since 2001. There has been a continuous exchange of economic envoys with EU nations and Russia, as well as reciprocal visits between government officials.¹⁶ Economic exchanges with Southeast Asian nations have also been relatively active.¹⁷

Third, recent discussions between North Korea and Russia on economic cooperation have been in earnest. Main economic cooperation issues included connecting the TSR and TKR, conducting joint development projects on North Korean mineral production, processing Russian crude oil in North Korea, obtaining energy resource aid from the Far Eastern Federal District's energy sources, and having cooperative lumbering and farming in Russia's Far Eastern Federal

¹⁵ North Korea and Russia entered various forms of written agreements on economic cooperation in 2002. Some major agreements included a memorandum on economic cooperation between North Korean and Russian firms (12 February); an agreement on scientific cooperation between North Korean and Russian scientific research institutes (22 March); and an agreement on connecting the TKR and TSR, plus blueprints for restoring and modernizing the *Donghae* Railroad (2 November).

¹⁶ Between 2 March and 15 March 2002, North Korea sent economic representatives to Belgium, England, Italy, and Sweden, to explore the expansion of economic cooperation with those nations. The team of economic representatives comprised twelve people, including Lee Kwang-geun (chief representative), Kim Choon-seup (deputy finance minister), Ahn Young-kil (deputy minister of metal and machine-building industries), and Kim Gwang-gook (deputy minister of mining industries). Additional diplomatic efforts were focused on Germany, Sweden, and international organizations for increased economic cooperation and aid. An agreement on economic and technological cooperation was signed with Sweden (April 2002), and negotiations were made with Germany and Switzerland for gratuitous food aid of frozen beef.

¹⁷ Kim Young-nam, chairman of the Presidium of the Supreme People's Assembly, visited Southeast Asia (Indonesia, Malaysia, Thailand) and the Middle East (Libya, Syria) in March 2002 in an effort to increase investment and cooperation in the transfer of technology. An agreement was entered with Thailand regarding the promotion and protection of investments (March 2002), and North Korea imported 200,000 tons of Thai rice. A protocol was signed with Malaysia regarding the use of export credit loans for the sale of palm oil.

District.

Fourth, a small decrease existed in the total volume of trade in 2002, after a continuous increase since 1999. One of the reasons for this downturn was the deterioration in diplomatic relations with Japan, which had dramatically decreased exchanges between the two nations. Also, the decrease in international aid, the poor performance of North Korean factories and firms, and the lack of competitiveness of North Korean products in the export market were considered to have contributed to the decrease in North Korea's foreign trade.

In 2003, North Korea's foreign economic cooperation faced increasing difficulties among the escalation of tensions with the United States over the nuclear crisis. Plans to acquire foreign capital by establishing special economic zones, which had been enthusiastically promoted after the July 1 Economic Reform, fell short of expectations, as did economic cooperation with Japan and EU nations. As a result, North Korea actively pursued foreign economic cooperation with China, Russia, and Southeast Asian nations during 2003.¹⁸

The most notable aspect of this development was the strengthening of economic cooperation with Russia. As previously mentioned, possibilities for economic cooperation in many areas had been explored during the summit meetings of 2001 and 2002. In 2003, detailed plans for economic cooperation in the railway, light industry, and lumbering sectors materialized.

In the lumbering sector, agreements were reached on establishing lumber-processing plants and sending additional lumbermen along with the North Korean minister and deputy minister of forestry on their February 2003 visit to the Far Eastern Federal District of Russia.¹⁹ In the light industry sector, the North Korean minister of light industry visited the Far Eastern Federal District and reached an agreement on expanding cooperation between the light industries of North Korea and Russia's Primorski region. Furthermore, three exhibitions showcased North Korean products such as computers, footwear, and other household goods. The first exhibition was held in Saint Petersburg from 27 January to 3 February 2003, and the second and third were held in the Far Eastern Federal District of Russia between 2 July and 5 July 2003 and 7 July and 10 July, respectively. In the railway sector, 100 Russian railroad experts have begun basic geographical and operational assessments for the Hamsan-Rajin line. In October 2003, separate agreements on tariff cooperation and technological co-

¹⁸ Ministry of Unification (2003, 55–58).

¹⁹ As of 2003, 1,400 North Korean laborers were working in the farming and lumber-processing sectors of Primorski, Russia. It is said that the two nations have agreed to about 3,000 laborers by the end of 2004.

operation were signed. For the first time, Russia decided to send \$10 million worth of food aid to North Korea through the World Food Program.

Relations with China continued to be very close in 2003. Political cooperation became far more active since the previous year, with China playing the role of mediator in the Six-Party talks to resolve the nuclear crisis. The same trends were observed in economic cooperation. As economic cooperation with Japan and the West dwindled because of the nuclear crisis, cooperation with China expanded. In October 2003, Wu Bang-xiao, chairman of a standing committee of the National People's Convention, visited North Korea to discuss resolving the North Korean nuclear crisis and expanding cooperation between the two countries. At the summit, China announced plans to provide economic aid for rebuilding the North Korean economy and to increase grant-type aid. In 2003, China provided North Korea with 10,000 tons of diesel fuel and 10,000 tons of loans.

With the decrease in trade with Japan, North Korea has concentrated on expanding economic cooperation with Southeast Asian nations, especially Vietnam, Thailand, India, and Indonesia. In 2003, there was a considerable expansion of economic cooperation with Vietnam, and North Korea sent over a training team of twelve economic bureaucrats and a group of legislative representatives of the Supreme People's Assembly in August 2003; trade envoys in September 2003; national quality control representatives and economic representatives from the foreign trade department in November 2003; and military-political workers' representatives in December 2003.

Reference

In Korean

- The Bank of Korea. 2004. *North Korea GDP Estimation Result 2003*. Seoul: The Bank of Korea. ii
- Cho Myung-cheol ed. 2001. *10 Years of North Korean External Economy Policy: Evaluation and Tasks*. Seoul: The Korea Institute for International Economic Policy.
- Cho Myung-cheol and Hong Ilk-pyo. 1998. *The Foreign Investment Inducement Policy of North Korea and Investment Environment*. Seoul: The Korea Institute for International Economic Policy.
- Kim Young-su, et al. 1997. *North Korea of the Kim Jong-il Era*. Seoul: The Samsung Economic Research Institute.
- KOIRA. 2001. *The Trends of North Korean External Trade between 1990-2000*. Seoul: KOIRA.
- _____. 2003. *Trends in North Korean Foreign Trade in 2002*. Seoul: KOIRA.

- _____. 2004. *Trends in North Korean Foreign Trade in 2003*. Seoul: KOIRA.
- Rim Kang-taek. 1998. *The Characteristics of North Korean External Trade and the Prospect of Trade Policy Change*. Seoul: Korea Unification Institute.
- Ministry of Unification. 2003. *Comprehensive Assessment of the North Korean Economy 2003*.

In English

- Ahn Choong Yong ed. 2003. *North Korea: Development Report 2002/03*. Seoul: The Korea Institute for International Economic Policy.
- Noland, M. 2000. *Avoiding The Apocalypse: The Future of The Two Koreas*. Washington D.C.: The Institute for International Economy.
- UNCTAD. 2003. *World Investment Report 2002: Trends and Determinants*. New York: United Nation Publication.

Chapter 10

Special Economic Zones

In September 2002, North Korea revealed plans to develop the Sinuiju district as a special economic zone (SEZ). North Korea's implementation of a new SEZ is significant in terms of economic reform and openness as it correlates with the economic policy adjustment measure of July 2002 and with subsequent changes in various internal economic management systems. Although the Sinuiju SEZ faced initial difficulties in its establishment, including the dismissal of the appointed administrative minister Yang Bin (an ethnic Chinese businessman of Dutch nationality) and worsening foreign relations caused by the revelation of North Korea's nuclear weapons development programs, it has attracted special attention because of its remarkable provisions. The North Korean regime has bestowed on the Sinuiju SEZ legislative, administrative, and judicial autonomy, plus the rights to engage in independent diplomatic affairs and autonomous trade relations within the scope prescribed by the central government.

Moreover, North Korea has actively promoted the construction of the Kaesong Industrial complex, a major inter-Korean economic cooperation project, which was initiated by an agreement between the South Korean company Hyundai Asan and the North Korean authorities soon after the June 15 Summit Meeting of 2000. The North's high expectation for the Kaesong industrial complex is demonstrated by the opening of the Kaesong region, which is considered a sensitive security area for the North, in the form of an SEZ. Another sign of the North's keen interest can be seen in its implementing a new development plan that commissions the formulation and administration of the Kaesong industrial park to South Korean business entities such as Hyundai and the Korea Land Development Corporation. Furthermore, despite the deterioration in its foreign relations after the October 2002 revelation of nuclear development programs,

Pyongyang has made great efforts to consistently provide follow-up measures for the promotion of the Kaesong industrial complex.¹

The geographical merits of Kaesong and Sinuiju give those zones the potential to develop into thriving SEZs through economic cooperation with Metropolitan Seoul and the Chinese city of Dandong. This potential is particularly evident with the Kaesong industrial complex. When the ongoing restoration of the Trans-Korea Railway (TKR, *Kyonguisun*) is completed, land routes between China and South Korea will be opened, and consequently, Kaesong could become a major transportation hub and export production base for North Korea.

However, given that the success of SEZs in other developing countries was influenced by various factors, the success of North Korea's new SEZs will not solely rely on the zones' geographical advantage. North Korea's efforts in attracting foreign investors and increasing the management efficiency of the special zones will be important factors. Consequently, the North Korean regime will need to build and upgrade the necessary infrastructure to activate the Kaesong industrial complex and the Sinuiju SEZ, while putting together a more flexible and innovative package of incentives.

This chapter will first examine the recent progress and institutional arrangements for North Korea's new SEZs and then will examine the zones' development possibilities as they facilitate the country's economic rehabilitation. This chapter will also address problems and tasks that North Korea needs to resolve so it can successfully activate the new SEZs.

A. Current Status of the New SEZs in North Korea

1. Kaesong Industrial Complex

In August 2000, the North Korean regime and Hyundai Asan signed an agreement to develop the Kaesong industrial complex.² However, owing to various

¹ For instance, to create institutional devices for the Kaesong industrial park, the North Korean regime promulgated the Kaesong Industrial Complex Law on 27 November 2002, and sub-guidelines of this law—Development and Firm Management Regulations, and Regulations on Taxation and Labor—were enacted on 28 June and 1 October 2003, respectively.

² In August 2000, Hyundai Asan made an agreement with the North-South Economic Cooperation Committee and the Asia-Pacific Peace Committee of North Korea to participate in a three-step development process for the Kaesong industrial complex. According to this agreement, the first phase of development was to be completed by 2001, the second phase by 2004, and the third phase by 2008. During the first phase, industries that would be able to start operations and production in a short period of time—textiles, apparel, footwear, leather, and electronic assembly—were to be established on 1

domestic and international constraints, such as Hyundai Group's financial difficulties, the U.S. war on terrorism, and the crippling of inter-Korean talks, little progress was made initially. It was not until North Korea enacted the Kaesong Industrial Complex Law in November 2002 and held the groundbreaking ceremony on 30 June 2003 that the project swung into full gear. The Kaesong Industrial Complex Law is composed of five articles and forty-six sections. Its main provisions include investor rights and limitations, economic privileges, duration of land use, labor utilization, taxation, and dispute settlement procedures.

In particular, given that its main objective is to attract investments from the South Korean business community, the Kaesong Industrial Complex Law includes specific provisions for South Korean investors' SIZ entry and departure and residential rights, personal safety, and autonomous economic activity. Although the law is not as innovative as the Basic Laws of the Sinuiju Special Administrative District, it includes some positive provisions, such as allowing investors to lease the land to build infrastructure and to make investments, guaranteeing investors' inheritance rights, and staffing the complex's management agencies in accordance with the developers' recommendations. In addition, the Kaesong Industrial Complex Law also provides for the unrestricted use of postal and communications services (Section 29) and for the free movement on designated routes between South Korea and the Kaesong area with an entry certificate issued by the SIZ management agency in lieu of a visa (Section 28). Those measures were meant to simplify the investors' entry and departure process and the customs clearance procedures for resources, and they were requested by South Korean investors as a prerequisite for investing in the Kaesong Industrial Park.³

On 23 December 2002, a month after the enactment of the Kaesong Industrial Complex Law, the North Korean regime issued a land use certificate to Hyundai Asan for 20 million *pyong* of land in the Kaesong area. Furthermore, the North Korean authorities expressed their interests in developing the Kaesong industrial park by announcing their Development Regulations, Regulations on the Establishment and Management of Firms, and Tax and Labor Regulations on

million *pyong* of land. When the Kaesong industrial park is complete in the third phase in 2008, the plan is that 1,200 companies would be located in the 8-million-*pyong* (26.6 km²) complex and employ some 160,000 workers. Also, there were plans to construct a new city on 12 million *pyong* (40 km²) of land, containing residential complexes and other facilities for the industrial complex. However, because construction of the industrial park has been delayed for various reasons, large revisions of the developmental plan and downsizing of the project are inevitable at present.

³ For more detailed information on the Kaesong Industrial Complex Law, see the South Korean Ministry of Justice (2003), Hong Soon-jik (2002), and Shin Ji-ho (2002).

28 June 2003 and 1 October 2003. Those regulations provide specific operational procedures for developing the complex. The Kaesong Industrial Complex Development Regulations, which consist of nineteen articles, specifically provided for the legal status of the Kaesong industrial park and the specific roles of the South Korean investors and the North Korean government. The regulations provided the basis for stable progression of the development project and for increased autonomy of South Korean developers such as Hyundai Asan and the Korea Land Development Corporation. For example, those developers can build the infrastructure in collaboration with other foreign investors or can even commission the project to other foreign developers. Furthermore, the North Korean regime has guaranteed to fulfill the South Korean developers' requests for skilled labor and administrative services. Relevant agencies have vowed to cooperate on minimizing inconveniences in the flow of South and North Korean resources and labor related to the development of the industrial park.

The Kaesong Industrial Complex Regulations on the Establishment and Management of Firms, which were enacted along with the above-mentioned Development Regulations, include specific provisions on (a) investment promotion and procedures for establishing firms (Sections 2-4); (b) financial capital and management requirements (Section 6); (c) format and period of investment (Section 10); (d) scope of management activities and issuance of bonds (Sections 16-18); and (e) accounting issues, distribution of profit, and methods of asset liquidation (Sections 21-32). One can also discern in its announcement of the Kaesong Industrial Complex Tax and Labor Regulations on 1 October 2003—the North Korean regime's concerted efforts toward stimulating the inflow of foreign investment and developing the industrial complex.

The focal points of the Tax and Labor Regulations rest in the following decisions made by the North Korean regime: (a) designating the income tax (corporate tax) rate for investing firms at 14 percent, which is comparably lower than that of SIZs in neighboring countries; (b) stipulating \$50 as the minimum monthly wage for North Korean workers; and (c) setting the social insurance cost at 15 percent of the monthly minimum wage (\$7.50). Moreover, by providing in Section 11 of the Tax Regulations that tax payments in the SIZ shall be made in U. S. dollars, the central government showed its willingness to minimize inconvenience to foreign investors. Those detailed regulations on the establishment of firms, tax, and labor, which were based on a legislative framework for the promotion of the industrial complex, are considered relatively well designed. It is anticipated that the North Korean regime will enact other specific regulations, thereby addressing the residency status of labor, flow of industrial resources, accounting, foreign currency, management agencies, customs, marketing and advertisement, and real estate.

The development project of the Kaesong Industrial complex was the answer to South Korea's commitment to revitalizing inter-Korean economic cooperation and North Korea's need to overcome its economic hardship. Despite the many setbacks that could have halted the project, the groundbreaking ceremony for the Kaesong Industrial complex was finally held on 30 June 2003. In July and August 2003, land surveys and soil sampling were conducted on 1 million *pyong* of land designated for the first phase of the project. Although the agreement between Hyundai and the North Korean government in 2000 is presently unalterable for a drastic revision of the development plan, the construction of a showcase industrial complex of 28,000 *pyong* in size is ongoing and is aimed for completion by the end of 2004.

2. The Sinuiju Special Administrative District

The North Korean regime expressed its intent to develop the Sinuiju area by declaring the formation of the Special Administrative District in September 2002, following implementation of the July 1 Economic Reform. The designation of the Sinuiju area as an SEZ was something that had been anticipated since Kim Jong-il's visit to China in January 2001. However, it received increased attention because of the unprecedented and experimental content of the area's Basic Laws issued by the Supreme People's Assembly's Standing Committee. These laws granted to the Special Administrative District the legislative, administrative, and judicial autonomy, and they allowed independent foreign economic relations and consular operations within the scope prescribed by the central government.

The Basic Laws of the Sinuiju Special Administrative District comprise six articles and 101 sections. They stipulate that the legal status of the district will not change within the next fifty years, and they also grant many of the SEZ's administrative rights to the administrative minister. The most noteworthy characteristic of the Basic Laws is that they contain elements of the market economy, such as rights to personal property and inheritance.⁴ Other elements of the Basic Laws of the SEZ include (a) the right to autonomous money market financing,

⁴ According to Sections 12, 14, and 15 of the Basic Laws of the SEZ, the right to possess land belongs to the state, while the right to develop land, use it, and manage it belongs to individual investors. Also, Section 17 of the same law stipulates that within the Sinuiju SEZ, the right to personal property is protected, as is the inheritance right to that property. Moreover, personal assets in the SEZ cannot be expropriated by the state. And if expropriation is inevitable for reasons such as national security, the owner shall be compensated accordingly.

Table 10-1. Main Contents of the Basic Laws of the Sinuiju Special Administrative District

	Main Content
Politics (Article 1)	<ul style="list-style-type: none"> - Stipulation of autonomous legislative, administrative, and judicial rights through regulations regarding the legal status and autonomy of the Special Administrative District (Section 2) - Elimination of the central government's intervention in the administrative affairs of the district, except in matters of national defense and foreign relations (Sections 6,7) - Prohibition of political activities (Section 10) - Granting of rights to conduct international business and consular affairs in the name of the Special Administrative District
Economics (Article 2)	<ul style="list-style-type: none"> - Granting land development, use, and management rights, and of guaranteed personal rights to inheritance (Sections 12, 14, 17) - Guaranteeing land-lease period of fifty years with the possibility of extension thereafter - Strengthening the autonomy of the district through regulations that allow autonomous money market financing and unrestricted import and export of foreign currency (Section 23); tax breaks for investment firms (Section 24); and a preferential tariff system (Section 25) - Granting autonomous budget management (Section 27) - Establishing regulations concerning investment and business facilities (Sections 29–31) - Establishing 48-hour workweek (Section 19); regulations concerning vacation and the social welfare system (Section 25)
Culture (Article 3)	<ul style="list-style-type: none"> - Eleven years of free mandatory education (Section 33); medical insurance (Section 38) - Geared toward minimizing regulations concerning cultural activities within the Special Administrative District - Autonomous publication of periodicals such as newspapers and magazines, and autonomous management of broadcasting and communications systems
Basic Rights of Residents (Article 4)	<ul style="list-style-type: none"> - Stipulating basic rights and obligations of the residents of the Special Administrative District - Bestowing equal rights and obligations to foreign nationals by including regulations that stipulate that there will be no discrimination based on language, race, ethnicity, nationality, or gender - Authorizing freedom of movement for the SEZ residents (Section 49)
Institution (Article 5)	<ul style="list-style-type: none"> - Clarification of the district's autonomy from the central government by stipulating the powers and organization of the legislative assembly, the powers and obligations of the administrative minister, and the extent of the authority of the department of administrative affairs - Inclusion of foreigners with residency in the legislative assembly
Emblem and Flag (Article 6)	<ul style="list-style-type: none"> - Use of an independent emblem and a flag that are different from those of North Korea - Nonapplication of national laws to the district except those concerning national security - Use of a flag with a light blue background with a white peony flower at the center

(b) unrestricted flow of foreign currency (Section 23), (c) tax breaks for investment firms (Section 24), (d) a preferential tariff system (Section 25), (e) the SEZ's right to autonomous budget management (Section 27), and (f) foreign workers' right to change jobs and work authorization within the SEZ (Section 50). (See Table 10-1 for main contents of the Sinuiju Basic Laws.)

Although it is as yet unclear to what extent the North Korean regime will actually put the Basic Laws into practice, the significance of the Sinuiju SEZ lies in two points. The first is its level of autonomy—incomparably higher than that of the Rajin-Sonbong Free Economic and Trade Zone, which North Korea established in the early 1990s. The second is the establishment of a legal and institutional framework to attract foreign investment. While Yang Bin was unable to carry out his duties as administrative minister, North Korea's appointment of a foreign national as the first minister demonstrated an approach that clearly broke from the past. Moreover, the North Korean regime granted the administrative minister of the Special Administrative District authority over management affairs and development projects, as well as the right to appoint government officials for the administration. Upon examining the Basic Laws of the Sinuiju Special Administrative District, one can see that the North Korean regime has incorporated a large part of the lessons learned from China's SEZ experiences in the formulation of the Basic Laws that will maximize the benefits of the SEZ. For example, the appointment of a minister with administrative authority, plus the granting of autonomy to the Sinuiju Special Administrative District, except in matters related to diplomacy and national security, has given the SEZ a status similar to that of Hong Kong in relation to mainland China, while the institutional policies to attract foreign capital resemble those of SEZs in Chinese coastal areas. Therefore, while there is an urgent need to construct physical infrastructure and improve investment conditions for revitalizing the SEZ, the legislative and institutional aspects of the zone show great improvement.

B. Developmental Potential of North Korea's SEZs

The development potential of the Sinuiju area and the Kaesong industrial complex can be ascertained from their geographical advantage. Compared to other areas of North Korea, Sinuiju and Kaesong are considered to have a high potential for success as SEZs because their geographical proximity to South Korea and China increases the likelihood of economic cooperation with those neighboring countries. Moreover, with the completion of the inter-Korean railway restoration project, land transportation to China and South Korea will become possible. Sinuiju and Kaesong are ideally located to develop into a major

hub of transportation and trade between South Korea and China. The construction of a large-scale transit complex and the expansion of the supporting industrial infrastructure will be made possible with foreign capital, which will very likely be in the form of direct investment from South Korean and multilateral companies. Thus, if North Korea is successful in attracting foreign capital by touting the geographical advantage of the newly designated SEZs, the Sinuiju and Kaesong industrial park may develop into SEZs that unite industrial functions with key transit points and that are founded on economic cooperation with neighboring regions.⁵

If developing Sinuiju and Kaesong is geared toward actively using the infrastructure and other various resources of China's Jilin Province and the Seoul Metropolitan Area, not only will economic relations with those two regions be strengthened, but also there is a high possibility that Sinuiju and Kaesong will function as part of a unified economic zone with Dandong and Seoul in generating economic benefits. Subregional economic cooperation between border cities has been proven to produce a positive economic effect on the participating economies, as in the case of the Singapore-Johore (Malaysia)-Riau (Indonesia) Growth Triangle and the Guangdong Province of China-Hong Kong. Sinuiju could reap economic benefits by establishing a unified economic zone with its bordering city, Dandong of China, in which (a) resources would be pooled and used more efficiently as a result of the elimination of unnecessary competition, (b) foreign investment would be further encouraged, (c) a sizeable economy would be created, and (d) economic specialization would be increased.

Because the Kaesong region is so close to the militarized border with South Korea, the previous North Korean regime barely established any industrial foundations there, so the region currently has meager industrial infrastructures and what is there is obsolete and inefficient. Furthermore, the basic prerequisites for a successful SEZ, such as electricity, communications systems, and transportation, are lacking in this region. However, the condition of the existing infrastructure is irrelevant, because Hyundai Asan and the North Korean government have already agreed to develop the Kaesong industrial park and to construct new infrastructure if Kaesong is developed as an SEZ geared specifically to South

⁵ When seen in the light of the failed Rajin-Sonbong SEZ project in the early 1990s, the advantages of the Sinuiju and Kaesong areas' geographical location become even more significant. Not only was Rajin-Sonbong's transportation system so inconvenient that the area was cut off from the rest of North Korea, but also Rajin-Sonbong was isolated from the rest of the world, and its international trade was limited to small-scale trading with China's Yeonbyun area. Its poor transportation lines, communication systems, and antiquated infrastructure made the Rajin-Sonbong area a poor investment environment for an SEZ.

Korean businesses. Therefore, the construction of the infrastructure should not be difficult if the development of the Kaesong industrial park is undertaken in the direction intended by Hyundai Asan and other South Korean developers, with the North Korean regime's enthusiastic support.

Furthermore, there is a high possibility that, during the initial stages of development, the complex will be able to use the supporting resources in the Seoul Metropolitan Area. Also, because many of the firms entering the Kaesong industrial complex during the initial stages of development will be focused mostly on exporting, particularly to the South Korean market, Kaesong will most likely develop into an SEZ that combines industry and transit, with the Seoul Metropolitan Area as its main consumer base. However, if passage through the demilitarized zone (DMZ) were to be made inconvenient, it would be difficult for those benefits to materialize. Therefore, it is imperative that the North Korean regime implements measures to allow a relatively easy passage across the DMZ, along with the restoration of the inter-Korean railway line and opening roadways.

C. Obstacles to and Future Tasks for the Success of New SEZs

As examined above, the Sinuiju and Kaesong areas possess considerable developmental potential as SEZs because of their geographical advantages. However, those advantages cannot guarantee the success of an SEZ; they must be accompanied by vigorous efforts of the host country to attract foreign capital and to manage the SEZ efficiently. The following tasks must be tackled by North Korea so it can invigorate the investment environment of the Sinuiju and Kaesong SEZs and can make the zones more competitive than those in neighboring nations.

1. Lack of Infrastructure and Shortage of Development Funds

As already noted, North Korea's infrastructure and industrial facilities are extremely outdated because the country lacks investments following the economic crisis and because of the country's backward management system. This lack is especially significant for the Kaesong region because of its proximity to the militarized border with the South. The central government has not previously developed an industrial base in Kaesong, and the area's industrial infrastructure is very poor. Not only does Kaesong lack the basic infrastructure necessary for an industrial complex, such as electricity, communications systems, and a water supply, but also any existing facilities are obsolete and inefficient. When Hyundai Asan and North Korea agreed to establish the Kaesong Industrial Complex as an SEZ geared exclusively to South Korean investors, it was

under the condition that new infrastructure would be constructed. However, because site preparations to construct the complex and the necessary infrastructure require a large amount of funding over a long period of time, it will be difficult for only a few South Korean developers, such as Hyundai and the Korea Land Development Corporation, to sustain the project using only their funds. To get small- to mid-sized Korean businesses and foreign firms to invest and begin local production activities, visible progress must be made in the construction of basic infrastructure. Yet neither the South Korean developers nor the North Korean regime have been able to come up with concrete plans for funding the preparation of the complex's site and the construction of the infrastructure.

Therefore, North and South Korean developers involved in the project need to make a comprehensive and detailed plan for site preparation, as well as for the construction of the complex's infrastructure, including the energy and the communications systems. Also, diverse methods for procuring funding should be prepared. Several methods suggested for funding include combining the investments of Hyundai and the Korea Land Development Corporation with the project financing, infusion of public or commercial loans, and issuance of investment bonds for international investors. The expansion of physical infrastructure, which requires a large-scale inflow of funds, cannot be pursued as a short-term commitment. Hence, it is important that the North and South Korean developers direct their efforts toward increasing the profitability of the Kaesong industrial park so it can attract investment from domestic and foreign businesses and investors. The North Korean regime must also consider offering investment incentives, such as providing foreign investors who participate in constructing an infrastructure with long-term ownership rights and management rights. Moreover, efforts should be made to improve foreign relations in order to receive concessional development loans from the international financial institutions or neighboring countries.

2. New Strategies for Attracting Foreign Investment

North Korea is in competition with regions in Southeast Asia and China for foreign investment. However, investment conditions in North Korea are extremely weak in comparison to those of Southeast Asia and China, and it would be difficult for North Korea to improve its investment conditions in a short period of time and to create a competitive investment environment. With such disadvantages, it is important for North Korea to use a distinctive strategy for attracting direct foreign investment and the relocation of South Korean firms into North Korea.

North Korea needs to target countries and industries with high investment

potential, to establish an appropriate strategy, and to actively lure foreign investors into North Korea. Countries with high potential for investment in Sinuiju and Kaesong are China and South Korea. During the process of opening Sinuiju and Kaesong, the North Korean regime must have a specific target of potential investor candidates. Preferential treatment should be given to South Korean and Chinese firms with legal and institutional guarantees to extend investment incentives.

If one considers the Sinuiju region's industrial and geographical conditions, then light industry, transit industry, and communications industry are assessed to have high development potential. Therefore, it is important to concentrate resources into developing the equipment supplies, export processing, and joint investments for light industries such as textiles. Concentrated effort should also be made to construct a transit complex after the TIR is restored. For the construction of the transit complex and the communications infrastructure, South Korean and Chinese firms interested in investing in the SITZ should be given the right to autonomous development and management. In other words, the development of the SITZ needs to be in line with each investing company's business plan. In the case of the Kaesong Industrial Complex, the development of the SITZ must be geared toward fully using the available South Korean infrastructure, market, and capital. Furthermore, the formation of the industrial complex must follow the development blueprints of the main South Korean business entities, such as Hyundai Asan. Therefore, continued negotiations with the main South Korean developers and other firms expected to enter the complex will be necessary to overcome legal and legislative weaknesses.

3. Guarantees for Autonomous Corporate Activities

No matter how exceptional the developmental blueprints or the promulgated laws, if they are not accompanied by diligent execution to stimulate foreign investment, they will not produce a more-attractive investment environment for the SITZ. If North Korea is to ensure the success of the Sinuiju and Kaesong SITZs, it is vital that the regime provides conditions that allow foreign investors to perform management activities in a free environment. For that, the North Korean government must guarantee the autonomy of businesses that enter the SITZ. As was evinced in the cases of South Korean firms' past investment projects in North Korea and of Rajin-Sonbong zone, North Korea has the tendency to excessively infringe on the management rights and to interfere in the business activities of foreign companies. Thus, an institutional device needs to be set in place to prevent excessive interference in the investing companies' management activities, and strict adherence to established laws related to foreign in-

vestment is essential.

The central government must also guarantee autonomy in personnel management to investing firms and must increase the flexibility of the labor market. In the past, regulations required foreign investing companies to procure their labor force from an intermediary state agency, which even managed the labor conditions and the method of wage payment to the stationed workers. With such restrictive labor conditions, it will be impossible to attract foreign companies whose major reason for investment is the cheap labor. Therefore, the North Korean regime must allow investing companies to hire and terminate employees at will, at least within the SEZs, and must grant the firms autonomy in personnel management and in determining wage conditions. To ensure a firm's management autonomy, North Korea must guarantee the remittance of profits, establish non-restrictive international communications connections, and allow the movement of labor.⁶

4. Economic Cooperation with Neighboring Countries

As previously shown, the challenges of improving investment conditions in the SEZs lie mostly in tasks that the North Korean regime needs to undertake internally. Moreover, international economic cooperation is a challenge that must be met by improving North Korea's relationship with other countries. First of all, in the case of the Sinuiju SEZ, if one is to use its greatest advantage, which is geographical location, then the zone must secure China's active support. On the surface, China has seemed favorable toward the SEZ designation of the Sinuiju region. However, because of military and security reasons and the burden of considerable funding needs, China has so far shown little enthusiasm for the opening of Sinuiju. Some diplomatic tension also existed between North Korea and China regarding the appointment of Yang Bin as the administrative minister. Because Sinuiju may end up competing with China's Dandong area, the Chinese are guarded about developing the Sinuiju SEZ. The North Korean government must consider the important role of China in developing the Sinuiju SEZ and should work toward obtaining active support from the Chinese government and direct investment of Chinese capital. One way to induce China's participation is for the North Korean regime to persuade the Chinese government with a long-term development plan that will invigorate Sinuiju. The plan should

⁶ For more details on various measures and specific policy proposals on the guarantee of foreign firms' right to free management, see Hwang Dong-eon (2000), Seo Bong-kyo (2001), Choi Su-young (2001), and Hong Soon-jik (2002).

include the mutual benefits of creating a Sinuiju–Dandong unified economic zone and the positive effect that the Sinuiju SEZ will have on developing China’s three northeast provinces (Helionjiang, Lianing, and Jilin).

In the case of the Kaesong industrial complex, in which mostly South Korean firms are expected to participate, the progress of the TKR (*Kyonguisun*) restoration project is essential to the park’s successful development into a business complex and major transit hub. The North Korean government should, therefore, push for a speedy completion of the railway project and the establishment of a stable transportation network between North and South Korea. Once tangible progress is made to restore the railway and once land transportation between South Korea and China becomes possible, the value of the Sinuiju and Kaesong SEZs will rise significantly. This development will induce further investment from South Korea, as well as from other neighboring countries such as China, Japan, and Taiwan. The North Korean regime, through negotiations with South Korea and China, must find ways to eliminate tariffs on goods produced in the Sinuiju region and the Kaesong industrial complex to maximize this advantage.

5. Improvements in Inter-Korean Relations and Foreign Relations

To invigorate inter-Korean economic cooperation and to lure direct foreign investment into the SEZs, a stable North-South relationship and stable foreign relations must be established on the basis of mutual trust. Most of the inter-Korean economic cooperation projects that have been pursued since the late 1990s have been heavily affected by the political and military situation on the Korean peninsula. It has been suggested that the reason behind the sluggish progress made on the Kaesong industrial park is the increased investment risk factors posed by North Korea’s unstable foreign relations.

Also, with North Korea’s October 2002 revelation of its nuclear weapons development program, the interest of South Korean firms to enter North Korea, which had increased with the SEZ designation of Sinuiju, cooled dramatically. Those reactions demonstrate the important role that stabilizing foreign relations plays in the decision of South Korean and foreign firms to enter the North Korean market. The establishment of a company in an SEZ or a company’s participation in the construction of infrastructure requires a large-scale investment in the early stages of business operations. Thus, unstable inter-Korean relations and North Korea’s unpredictable foreign relations are undoubtedly the most important factors hindering foreign companies from entering North Korea.

In terms of foreign relations, the most important issue to be resolved is North Korea’s relationship with the United States, which has become considerably

strained over the nuclear crisis. In some respects, the U.S.-North Korea relationship will play a role in determining North Korea's economic rehabilitation through SEZs and in improving North Korea's international economic activities. Normalized relations with the United States not only will contribute to increasing the influx of technology and foreign capital needed to develop the SEZs, but also will be necessary for developing foreign markets for goods produced in the SEZs. In addition, there are tight international regulations on the trade of some industrial resources, such as dual-use goods and advanced technology and machinery for building an industrial base. Those technology and industrial equipments are necessary for constructing and modernizing the infrastructure in the SEZs. Considering the international regulations restricting exports and limiting the inflow of foreign investment and technology, North Korea definitely needs to focus its efforts on improving inter-Korean relations and its foreign relations for the success of new SEZs.

References

In Korean

- Chang Myung-bong and Park Jung-won. 2001. *North Korea's Liberalization of Foreign Economics Relations and the Direction of Revision of Related Legislation*. Seoul: Korea Economic Research Institute.
- Cho Myung-cheol. 2001. *The Status of North Korea's Market Economy Education and Plan for North-South Cooperation*. Seoul: Korea Institute for International Economic Policy.
- Cho Myung-cheol and Lee Jong-woon. 2001. "Evaluation of the Sinuiju-Dandong SEZ Development Plans and Tasks." *KIEP World Economy Update*, No. 01-58. Seoul: Korea Institute for International Economic Policy.
- Choi Su-young. 2001. "Assessment of North Korea's Ten-Year Strategy for Attracting Investment and Its Future Tasks." In Cho Myung-cheol ed. *North Korea's Foreign Economic Policy: Evaluation and Problems*. Seoul: Korea Institute for International Economic Policy, pp. 56-89.
- Export-Import Bank of Korea. 2002. *North Korea's Sinuiju Liberalization Plans and Future Prospects for the Liberalization Policy*. Seoul: Export-Import Bank of Korea.
- Federation of Korean Industries, Center of Northeast Asian Economy. 2002. *The Economic Effectiveness of the Kaesong Development of the Industrial Complex*. Seoul: Federation of Korean Industries.
- Hong Ik-pyo. 2002. "The Background of the Establishment of the Sinuiju SEZ and Tasks for Future Progress." *KIEP World Economy Update*, No. 02-31.

- Seoul: Korea Institute for International Economic Policy.
- _____. 2001. *North Korea SEZs' Expansion Potential and Direction of Development*. Seoul: Korea Institute for International Economic Policy.
- Hong Soon-jik. 2002. "The Economic Effects of and Conditions for the Successful Development of the *Kaesong Industrial Complex*." *Unified Economy* (July–August): 52–65.
- Hwang Dong-eon. 2002. "Prerequisites for the Success of the *Kaesong Industrial Complex*." *Unified Economy* (July–August): 61–74.
- Hyundai Asan Corp. 2003. *Outline of the Kaesong Industrial Complex Project*. Seoul: Hyundai Asan Corp.
- Kim Hwa-seob. 1998. *East Asia Economic Cooperation Model: Focusing on Division of Labor in Key Areas*. Seoul: Korea Institute for Industrial Economics and Trade.
- Kim Won-bae. 2000. "Exploring Methods of Development for the *Sinuiju-Dandong Joint Area*." *Reunification Issues Research* 4, no. 2: 5–17.
- Kim Yeon-cheol and Park Sun-sung. 2002. *A Study on North Korean Economic Reform*. Seoul: Humanitas.
- Lee Chan-woo. 2001. "The Role of China's *Dandong City* in the Northeast Asian Economic Cooperation and Its Prospects." *Unified Economy* (May–June): 72–83.
- Lee Jong-woon. 2002. "The Status of the *Sinuiju Area's* Industries and Tasks for SEZ Success." *KIEP World Economy* 5, no. 11: 38–49.
- Park Jae-ryong et al. 2001. *Proposal for Successful Promotion of Special Economic Zone*. Seoul: Samsung Economic Research Institute (CEO Information 64).
- Seo Bong-kyo. 2001. *Prospects and Challenges for North Korean SEZs: Comparison with China's SEZs*. Seoul: LG Economic Research Institute.
- Shin Ji-ho. Spring 2003. "North Korea's SEZ Strategy and Tasks for Success." *Unified Economy* 48–64.
- _____. 2002. *Analysis of the Kaesong Industrial Complex Developmental Regulations: Their Economic Adequacy*. Seoul: Korea Development Institute.
- South Korean Justice Ministry. 2003. *Analysis of North Korea's Kaesong Industrial Complex Developmental Regulations*. Seoul: South Korean Justice Ministry.

In English

- Crane, George T. 1990. *The Political Economy of China's Special Economic Zones*. London: An East Gate Book.
- Ge, Wei. 1999. "Special Economic Zones and the Opening of the Chinese

Economy: Some Lessons for Economic Liberalization.” *World Development* 27, no. 7: 1267–85.

Lee Jong-woon. 2003. “The Emergence of the IT Industry in North Korea and Inter-Korean Cooperation in the IT Field.” *Journal of International Economic Studies* 7, no. 1: 143–75.

Chapter 11

Inter-Korean Economic Relations

A. Current Situation

1. Increased Trade

Despite tensions related to the nuclear weapons program in North Korea, inter-Korean economic cooperation generally increased in 2003. In the few years before then, nonreciprocal trade had been the main form of South-North economic cooperation, but in 2003 the rate of reciprocal trade exceeded the rate of nonreciprocal trade.

Overall, the amount of trade between the South and the North in 2003 increased by 12.9 percent over the previous year, to \$724.22 million. The amount of imports increased by 6.5 percent, reaching \$289.25 million. Major import products were agriculture and marine products, as well as textiles. Agriculture in particular accounted for 44.2 percent of the total imports, while marine products, the most important product in the economic cooperation, accounted for 31.1 percent. As the processing of imported materials increased, the importation of textiles rose by 12.4 percent, to 33.4 percent of total imports. Exports increased by 17.5 percent, to \$434.97 million, and the major export products were agriculture and marine products, textiles, and chemical products. The main reason for the increase in exports was South Korea's assistance for the North to receive rice on a loan basis.

By the end of 2003, the South was \$145.71 million in the black, and the North was \$169.49 million in the black owing to the substantial amount of trade, which involved 481 companies (109 companies for processing on commission) and 588 products (217 products as imported material processed on commission).

The types of products were relatively few given the number of companies, because most companies tended to dismiss their inter-Korean business after one project was completed.

Reciprocal trade increased by 19.2 percent to \$409 million during 2003 (imports equaled \$289.08 million, exports were \$119.60 million), accounting for 56.4 percent of total trade. (See Table 11-1.) Commercial trade rose by 30.2 percent to \$223.67 million (imports equaled \$177.44 million, exports equaled \$46.23 million), accounting for 30.9 percent of total trade and 54.8 percent of reciprocal trade. Processing-on-commission trade increased by 8.1 percent to \$185.01 million, accounting for 25.5 percent of total trade and 45.2 percent of reciprocal trade.

Table 11-1. South-North Trade

(unit: \$100 million)

	1998	1999	2000	2001	2002	2003
Reciprocal Trade	1.44	1.89	2.44	2.36	3.43	4.09 (19.2%)
Commercial Trade	0.73	0.89	1.15	1.11	1.72	2.24 (30.2%)
Processing on Commission	0.71	1.00	1.29	1.25	1.71	1.85 (8.1%)
Nonreciprocal Trade	0.78	1.44	1.81	1.66	2.99	3.16 (5.6%)
Total	2.22	3.33	4.25	4.03	6.42	7.24 (12.9%)

Source: Ministry of Unification (various issues).

Nonreciprocal trade increased by 5.6 percent to \$315.54 million, which was 43.6 percent of total trade. Material trade for inter-Korean economic cooperation decreased by 46.3 percent to \$44.89 million, which was 6.2 percent of total trade and 14.2 percent of nonreciprocal trade. In detail, trading for a light water reactor project was \$23.77 million, trading for the Mt. Kuikang project was \$16.11 million, and trade for other cooperation projects amounted to \$5.02 million. Aid to North Korea increased by 27.0 percent to \$178.98 million, which was 37.4 percent of total trade and 85.8 percent of nonreciprocal trade.

2. Business Cooperation at a Standstill

a. Current State of Business Cooperation

Since the approval of Daewoo Corporation's processing-on-commission project in the Nampo area on 5 October 1992, there have been, as of October 2003, fifty-six South Korean companies received government approval for inter-Korean business and twenty-seven business projects got the permission from the government. South Korean firms were approved and two business projects

also gained approval. (See Table 11-2.) Among the companies approved for economic cooperation business were (a) Hyundai Asan and Asia-Pacific Peace Committee for the Kaesung tourism business, (b) PyungHwa tours and the International Mt. Kumgang Tour Company for the Pyongyang tour business, (c) Korea Resources Corporation and North Korea's SamChunLi Company for the graphite mining business, and (d) G-Hanshin, KyungPyung International Company, and North Korea's KwangMyungSung Company for the food processing business. The Pyongyang tour business and graphite mining business are the two that were approved as cooperation businesses. Although new economic cooperation businesses continue to be developed, instances of the actual execution of those businesses are relatively low considering the high international and domestic interest.

Table 11-2. Enterprises and Approval for Businesses

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Enterprises	1			6	4	16	13	2	1	6	3	4	56
Projects				1		5	9	1	2	5	2	2	27

Source: Ministry of Unification.

b. Government-Led Large Cooperative Projects

Cooperative projects led by the government are mostly infrastructure projects, such as the Kyongui and Donghae (East Coast) rail and highway project and the Imjin River flood prevention business. The Kyongui and Donghae rail and highway businesses are making steady progress. The North and the South held a ceremony on 14 June 2003 to link the rails of both sides at the demilitarized zone (DMZ). South Korea finished its portion of the Kyongui rail line on 31 December 2002 and is in the final stages of the Kyongui highway construction at the same time that it is laying down the roadbed for the Donghae rail and highway. The North has completed portions of the track construction—3.5 km of the Kyongui line and 2.3 km of the Donghae line—as well as most of the rail and highway roadbed constructions. At the meeting of the 7th South-North Economic Cooperation Promotion Committee, 8 November 2003, both sides agreed that the South would provide the North with materials and equipment needed for the construction while the North promised transparency in its use of the provisions. The rail track construction is proceeding with the South Korean materials and equipment.

The Imjin project to prevent river flooding is currently at a standstill pending the result of negotiations for a mutual agreement. Issues such as the execution of joint investigations, installation of flood warning equipment, and trees for fores-

tation are being discussed through the exchange of letters.

In the meantime, the construction of the North Korean light water reactor project is a multilateral project led by the KEDO and hence not directly an inter-Korean business. However, because Korea Electric Power Corporation is playing a central role in the project, it could be considered a large-scale cooperative business between the two Koreas. This business was also put on hold in response to the North Korean nuclear crisis and after the Korean and international media reported the *de facto* suspension of the light water reactor project. A spokesman for the North Korean Foreign Affairs Department stated that "if the reports are true, then the United States has nullified the agreement and caused great losses to North Korea not only by discontinuing their supply of heavy fuel oil but also by halting the light water reactor construction. North Korea will seek compensation for the energy loss caused by a delay in construction from KEDO and the United States while forbidding the retrieval of any equipment or materials from the Kujho district." The light water reactor project is at a complete standstill because of the nuclear issue, and it will probably become the prime example of South-North economic cooperation gone bad.

c. Kaesong Industrial Complex Development Project

Plans for the Kaesong Industrial Complex, a joint business between the Korea Land Development Corporation and Hyundai Asan, call for developing a 20-million-*pyong* complex (8 million *pyong* for the complex, 12 million for the adjacent city) encompassing the areas of Kaesong city and PyungHwa-Ri, Pannun-Kun. The first-stage objective is to build a 1-million-*pyong* prototype complex. Construction started on 30 June 2003, and the surveying and soil examination for this stage was completed between 21 July and 8 August 2003. On 16 April 2003, both sides agreed to institutional measures, such as subguidelines of the Kaesong Industry District laws, and five new provisions, including development provisions.

Five lower provisions have been agreed upon and are awaiting enactment. During the meeting of the seventh South-North Economic Cooperation Promotion Committee, additional items were decided, including the completion of the designs for a 1-million-*pyong* development sector by 2003, the commencement of the construction of the foundation by early 2004, and the expedient establishment and operation of an industry complex management corporation. Moreover, the decision to build a model housing development of approximately 100,000 *pyong* in area by the first half of 2004 provided a timetable for future development.

d. Tourism

One notable issue in the North-South economic exchanges of 2003 was the popularity of tourism. Institutional measures for the development of the symbolic Mt. Kumgang are in progress. North Korea designated the region as a special tourist zone on 25 November 2002 and enacted development and business establishment provisions on 29 June 2003. Additional provisions are being discussed, and the number of tourists is increasing with the opening of the land route. In February 2003, after trial runs, the North began accepting tourists on the land route. However, land trips have since been stopped because of road construction, and the sea route was closed for two months from 26 April to 26 June 2003 because of the SARS epidemic. The situation worsened when the subsidy for the tour was cut.

Fortunately, land trips started up again on 1 September 2003, and the number of tourists increased to 10,000 per month—an optimistic sign for tourism. The company forecast that it might be able to reach profitability in the near future. Meanwhile, Pyongyang opened its doors to tourism for the first time since the division of the peninsula. Pyonghwa Airlines initially planned to have 2,000 tourists on fifteen trips from September to December 2003. By the end of October, 1,016 tourists had joined the tour. North Korea requested that the tours be discontinued during the winter, and they were restarted on 20 April 2004. Even though the nature of the tours is much like a pilgrimage, it is significant that South Korean tourists are able to visit Pyongyang, the capital city of the North.

3. Establishment of Institutional Measures for Economic Cooperation

A notable event in inter-Korean relations is that various measures for economic cooperation are being continually established. Four joint economic cooperation agreements, addressing investment guarantees, prevention of double taxation, settlements, and conflict resolution among companies, are particularly significant. Those agreements were signed during the fourth ministerial talks in December 2000 but became effective only two years and eight months thereafter.

The main points of the provisions are as follows:

The South and the North have not had any laws that protected each other's investments and investors. Previously, North Korean foreign investment laws mentioned only foreigners and foreign residents, and South Korean companies were not sure whether they fit within that scope. Even in the recent laws related to the Kaesong and Mt. Kumgang projects, South Korean companies are not considered as "foreign residents." However, with the provision of investment guarantees, South Korean companies are now able to invest in North Korea

under the protection of North Korean law, and vice versa.

Provisions preventing double taxation are aimed at reducing taxes for businesses in North Korea by providing tax exemptions on income instead of income tax deductions. Income tax deductions are applied to passive income, such as interests, allowances, and royalties in accordance with international custom. Under those provisions, South Korean enterprises in North Korea were eligible for a 13 percent tax exemption, as North Korea imposes a 14 percent income tax while South Korea imposes a 27 percent income tax. There are many possible benefits from the new provisions. The relationship between South Korea and North Korea is defined as "special relations." Because trade between the two has the characteristics of both internal and external trade, taxation has been problematic. If South Korean enterprises can enjoy the preferential tax rate of North Korea, they will be able to be competitive, so increased numbers of companies will be interested in doing business in the North.

Provisions for settlement clearance of payment accounts in the inter-Korean trade are as follows: Both parties applied settlement clearance for payment of the agreed-upon products and then attached service charges. Applicable products should have an origin in either South Korea or North Korea. Other capital flows, except the amount for the settlement clearance, should be settled normally at banks designated by both parties. North Korea chose the Trade Bank and South Korea picked the Import/Export Bank. This move opened the possibility of direct trading, because in the past ten years, the two countries had no choice but to use a third nation's bank to make payments. In the event of any conflicts between the two parties and failing any negotiations for mutual agreement, the countries must consult the corporate dispute mediation commission for trade. The "Agreement on the constitution and operation of a North-South corporate dispute mediation body" had difficulty during the negotiation process, but the agreement was finally signed in the third economic cooperation talks (11-12 October 2003, Moon-san). Agreement on transit to Kaesong and Mt. Kumkang, plus other discussions related to the clearing of settlements, are ongoing.

4. Active Humanitarian Aid

Humanitarian aid started in 1995 when North Korea suffered a massive natural disaster that led to a serious food shortage and then requested international aid. That was the starting point for the South Korean government to give food aid to North Korea. In the private sector, the South Korean Red Cross was the only institution helping North Korea, but beginning in 1999, other entities began actively participating in support of North Korea. By 2003, South Korea had

provided about \$157.62 million in aid—\$87.01 million from the government and \$70.61 million from private entities. (See Table 11-3.)

Table 11-3. Humanitarian Aid to North Korea

(unit: \$10,000)

	1995–1998	1999	2000	2001	2002	2003	Total
Governmental Sector	27.272	2.825	7.863	7.045	8.375	8.701	62.081
Private Sector	4.221	1.863	3.513	6.494	5.117	7.061	28.369
Total	31.493	4.688	10.376	13.539	13.592	15.762	90.450

Source: Ministry of Unification.

B. Assessment of the Differing Positions of the South and North

In 2003, the nature of South-North economic cooperation changed. Most notably, the positions of the South and the North were reversed. North Korea had previously maintained a passive attitude toward economic cooperation. However, when the nuclear issue left it isolated from international society, North Korea began actively participating in economic cooperation with the South. It even asked the South to speed up several projects, such as the linking of roads and railways across their common border and the building of an industrial complex in Kaesong. Although there were already political limitations, North Korea showed itself to be strongly committed to a better relationship with South Korea. In other words, it changed its basic stance toward cooperation with the South. However, its “aid first, exchange later” attitude still needs improvement.

Since the beginning of Roh Mu-hyun’s administration, South Korea has been committed to the so-called Sunshine Policy (engagement policy) and a policy of peace and prosperity. However, Roh’s government was not successful in maintaining its policy because of the revelations of the North Korean nuclear weapons program and the ensuing conflicts with the United States. As a result, South Korea was not able to add much to the progress that the Kim Dae-jung administration made on economic cooperation projects with the North. The Mt. Kumgang tourism project should be revitalized through the use of short-term subsidies, but it was difficult to raise this issue at the National Assembly, thanks to the objection of the majority opposition party. The linking of the Kyongui railway is being delayed as North Korea focuses on the Donghae railways, which are not very profitable. Building the industrial complex in Kaesong is beset by conflicts between Hyundai and the Korea Land Development Corporation as well as several political problems, such as the nuclear weapons issue.

Moreover, the United States seems to have a negative view of South-North economic cooperation. The U.S. government basically believes that cooperation with the North could only prolong the Kim Jong-il regime. Washington has been examining North Korea's economic activities, including trade and foreign currency supply, and is seeking various methods to approach the North. However, the United States is reluctant about the idea of cross-border economic cooperation. Therefore, the U.S. government's intention might be very important as the two Koreas plan their direct exchanges. If North Korea can cope with the request of the United States on the issue of nuclear weapons, Washington might consider a more positive approach, including aid and appeasement for the North. In that case, circumstances for economic cooperation between the two Koreas will improve considerably, large projects in the North will proceed, and trade will increase. Although we do not see any such positive moves from the United States at the moment, the United States could become the most valuable ally once the nuclear weapons issue is solved. Only the normalization of relations between North Korea and the United States can bring the North international aid and improve its market situation.

In conclusion, the two Koreas should build a stable system for effective economic cooperation through the joint efforts of both governments while at the same time firmly maintaining ongoing projects, such as the industrial complex in Kaesong and tourism in Mt. Kumgang.

C. Problems of South-North Economic Cooperation

Economic cooperation between the North and South is being pursued along the following lines. First, the South believes that through steady economic cooperation, North Korea could gradually adopt a market economy, and the two Koreas could come to a better understanding and overcome differences. In successfully dealing with the economic gap, North Korea would be able to have economic power in the long run.

Second, the combination of South Korea's capital and technology with North Korea's human resources would provide a synergistic effect. The South is having difficulties because of the ongoing outflow of the manufacturing industry. If South Korea can persuade the companies that are leaving South Korea to go to the North, it could be a win-win situation for both Koreas.

Third, mutual cooperation should be strengthened. The two Koreas should seek to overcome their differences in custom, culture, and ideology by building on mutual interests and by creating an effective transportation network that will link North Korea to the international society and will strengthen ties between the Koreas.

Fourth, South-North economic cooperation should be institutionalized to ensure a firm foundation for further exchange. But before those goals can be achieved, there are still conflicts to be overcome.

First is the inevitable gap between the two Koreas. Even though North Korea is seeking to change its economic system, change is occurring at a snail's pace compared with change in the outside world, including the South. The North will obviously not be able to catch up to the South. North Korea does have a valuable workforce, but this resource will become irrelevant once the country can fully adopt a market economy because the labor market will be opened by then.

Second, economic cooperation projects do not reflect the actual situation. Both governments are gaining much criticism because economic cooperation is continuing while the nuclear issue is still unresolved.

Third, economic cooperation is being promoted under the catchy phrase of peace and prosperity. However, in actuality economic cooperation has tended to be limited to only a few companies (about 200) that have already participated in inter-Korean projects. Such a small number of participants is making other companies all the more reluctant to participate.

Fourth, economic cooperation between the Koreas is based on internal trade with each other and has not extended beyond the two countries. Therefore, economic activities should be pursued internationally. However, business projects between the two Koreas still concentrates on internal affairs, especially from the North's particular characteristics.

D. Possible Solutions for Economic Cooperation

Given all the problems, there are possible solutions for improving economic cooperation in the future. First, South-North economic cooperation should be a part of the South's external economic policy. The government should include all enterprises in the business with a standard set of policies and should give partial benefits to the participants of South-North economic cooperation. Considering the economic gap between the South and the North, South Korea should focus on reducing all risks from the North rather than gain profit from the economic cooperation directly. This approach will be more effective for achieving a real economic growth.

Second, the economic cooperation policy should be amended to take certain time lines into account. For instance, North Korea is planning an industrial complex in Keesong to improve its market situation. However, by the time the complex becomes operational, the North Korean market might be opened and the North might be able to use the Pyongyang region. There might be a huge difference between the current situation and what the South had predicted in the time

of the Sunshine Policy, considering today's international society. The United States and China are exerting pressure right now on North Korea to change, but according to the Sunshine Policy, any change in North Korea will come gradually through the inter-Korean economic cooperation.

Third, there is still a long way to go for inter-Korean economic cooperation with the North, so the government of South Korea must take the lead. The government should remove the gaps in customs and systems between the two countries to protect domestic companies that participate in economic cooperation. Then, enterprises that were indifferent to economic cooperation will be able to join without much risk. If the South Korean government is successful in increasing economic cooperation, it will have powerful leverage with which to influence the North, so that international concerns such as the nuclear issue will be mingled with the plan of cooperation, thereby accelerating changes in North Korea.

E. Other Instruments Needed

After the four joint economic cooperation agreements between the two sides go into effect, the minimum requirements to promote economic cooperation will be in place. That is, both parties will have entered a new stage of institutionalized cooperation. During the past ten years, South-North economic cooperation had been on less-secure ground because it was being propelled by past practices and not by a system. Such cooperation between the two Koreas is now supported by the institutional framework of the four agreements. In particular, where the two parties previously had no legal basis for their investment, they are now able to invest under their own foreign investment law as part of the investment guarantee agreement. Thus, the four agreements provide a turning point for developing economic cooperation.

Most important, direct trade between the two sides has now become feasible. Previously, the South and the North had to pay additional costs to conduct indirect trade through a third-party nation, thereby losing their competitive edge. In the preliminary stages of trading, the South wasted too much time and money in finding a link to the North. When the South actually entered the trading stage, it incurred huge losses in trying to find a right place to meet and a right method of communication. The two Koreas were not able to communicate efficiently, and the settlement of trade payments was also very unstable. As direct trade is becoming more and more a reality, many enterprises are expected to participate in the economic cooperation so they can take advantage of the increased competitiveness. Unnecessary costs hindering competitiveness will decrease because the joint agreement has made it possible to reduce losses and to attract

new companies.

Moreover, limitations stemming from the extraordinary relation between the South and the North have also been diminished. In the past, their relationship was described as "tentatively special relations," which made both parties different from ordinary foreign investors. Therefore, there have been several disadvantages to Korean enterprises that participate in the cooperation. For example, those companies could not put up collateral for a loan in relation to invested assets. Products needed to go through domestic quality controls. Korean companies were not able to receive any preferential treatment for their foreign operations and had to risk discrimination that other ordinary foreign operations did not face. Recently, companies have been able to put up collateral for a loan related to invested assets in North Korea, so receiving loans from financial institutions has become easier. As a result, enterprises in the economic cooperation business have been partially relieved of any liquidity difficulties.

Generally, enterprises already involved in the economic cooperation businesses are experiencing improvements since the four agreements have come into effect. However, it is too early to expect new companies to join. Companies have shied away from participating because of the uncertainties of North Korea's market environment. Even though the four agreements have made a better market situation, instabilities still exist to deter South Korean companies.

Several conditions still need improvement. First, guarantees on free transit, communication, and trade must be agreed upon by both parties. But before entering a mutual agreement regarding these three concerns, it is more urgent to enforce a "basic agreement" between the South and the North that not only brings together all the provisions from economic cooperation agreements but also sets up the fundamental definitions of inter-Korean relations.

Second, the four agreements should be firmly established and put in practice before any additional agreements are made. Continuous amendments and improvements of the agreements are particularly important, and governments should examine what effects the four agreements will have on existing businesses. Third, a system of direct account settlement between the two Koreas must come first, shortly after the implementation of clearance settlements. At present, both parties have mentioned clearance settlement banks. Additionally, details regarding clearance settlements should be specified, and the transactional methods of clearance settlements must be simplified. Moreover, ordinary settlement banks should be installed as soon as possible for ordinary settlements. Existing settlement methods can be made transparent by using corresponding banks, which is essential for a sound system of economic cooperation as well as for easing North Korea's unacceptable requests.

Internal preparation processes for preventing double taxation must continue.

There must be more realistic interpretations of the value-added tax and income tax, which have been tolerated by processing companies. Because there have not been many cases to examine, it could be more efficient to assess the domestic situation in relation to the agreement that would prevent double taxation.

F. Outlooks

During 2004, South-North economic cooperation will be entirely related to the process of solving the nuclear issue in North Korea. Exchanges between the two sides are currently limited. The South Korean government's peace and prosperity policy cannot be implemented while North Korea's nuclear weapons program exists. If the tensions on the Korean peninsula can be eased through six-party talks for a multilateral solution, there could be a new opportunity for economic cooperation.

North Korea should seek practical change and should build constructive relations with the international community through a fundamental change in its political aspects to achieve a synergistic effect. The settlement of the nuclear issue will lead to aid and better understanding from other states, which will naturally lead to the two Koreas having an improved environment for economic cooperation in 2004. However, North Korea's continuing insistence on its nuclear weapons program leaves open the possibility of a standstill.



Part IV

Social Security and Technology Development

Chapter 12

Social Security and Social Services

In a narrow sense, social welfare refers to a system of social relief or social works. Broadly speaking, social welfare can be understood as a social support system for relief, protection, prevention, and recovery of groups or individuals, which are considered as a “poor class” or “social outcast.” It is a system through which their life can be maintained at the average level of living standards.¹ Social welfare can be defined as social programs that are undertaken for all people and that consider a variety of problems along with changes in social structures. Such programs include social insurance, public assistance, social welfare services, health and medical care security, etc. Social welfare consists of a comprehensive system of public and civil programs, services, and institutions for the prevention, protection, treatment, and recovery of individuals and groups against difficulties and problems in social life, with the eventual aim of securing the basic livelihood of all people.²

Social welfare can be classified as social welfare service and social security; the former is to meet the needs for individuals’ adaptation to society and the latter is to use social insurance or direct aid to secure the income of the society member who is in need. In this chapter, social welfare refers to social security, which includes medical security, income security, public assistance, and social welfare services.

Immediately after liberation, North Korea was concerned about social welfare and addressed it by institutionally legislating various social security sys-

¹ Kim Man-doo (1982, 12).

² *Ibid.*, 19.

tems and by establishing welfare policies, although such efforts were focused on propagandizing the superiority of the socialist system. The related legal bases included a constitutional law and Kim Il-sung's instructions, most of which are still in effect, at least legally, even today.³

However, the North Korean social welfare system and its legal regulations have not been fully successful for several reasons. First, some of the legal regulations for social welfare are only declaratory. Their purpose is merely to propagandize socialist ideologies and the goals of North Korea in order to maintain the socialist regime. For example, the laws related to social welfare have been ignored in favor of the "Ten Principles for Sole Ideology of the Party."⁴ Second, even if a social welfare system were to be established, it would not be able to operate normally because of difficulties such as a poor economy and food shortages. Third, the level of services provided by the partial operation of the social welfare system is poor, quantitatively and qualitatively.

Taking those constraints into consideration, this chapter aims to identify the social welfare system of North Korea, including its legal bases, structure, contents, and problems in operation.

A. Structure and Contents of Social Welfare System

1. Medical Security

The medical security system of North Korea, established under the influence of the health and medical care system of the former Soviet Union, has its legal bases in the Social Insurance Act (enacted in 1946) and the Resolution on Practicing Medical Assistance and Reorganizing Industry Medical Care System for Laborers, Office Workers, and Their Dependent Family (1946). The free treatment system, which is the core of medical security, was adopted in the form of social insurance in its early stages but was covered by the national social security on the basis of the Ordinance on Operating Free Treatment (Cabinet Ordinance No. 203), which was enacted in 1952, because the increasing numbers injured or killed during the Korean War could not be covered by social insurance. The general practice of free treatment was regulated by the Ordinance on Rein-

³ Ro Young-hwan and Yeon Ha-chung (2000, 72).

⁴ Kim Jong-il established absolute deification of Kim Il-sung, perfect succession of power, and domination of Kim Il-sung's principles in the society through these ten principles. The ten principles dominate as the superlative law in North Korea, taking precedence over all other laws (North Korea Democratization Network 2003, 46).

enforcement of People's Health Activities, which was enacted in 1960.

In 1963, the doctor district assignment system was introduced. In 1970, the expansion of medical security was strengthened by enforcing a project for eliminating inequalities in medical security between agricultural and manufacturing laborers, as one of "Three Technological Revolutions." This system was followed in 1974 by a project to improve *Ri* dispensaries (clinics) in rural areas to the level of hospitals. The second Seven-Year Plan, launched in 1978, directed improvements in sanitation and disinfection, full operation of the doctor district assignment system, production of medicine and medical equipment, and expansion of medical facilities and treatment.

It was in 1980 that the medical security system was completed through the enactment of the People's Health Act, which integrated previous health policies and government decisions, as well as Kim Il-sung's instructions. The Medical Act regulated the enforcement of the doctor district assignment system as a basis for free treatment, reinforcement of preventive work, professionalization of the medical sector, development of medical technology, and encouragement of Korea's traditional medical science.

a. Recipients

In its initial stages, the recipients of the free treatment system were confined to laborers, office workers, and their dependent family members who were eligible for social insurance benefits.⁵ However, the range of recipients was gradually expanded to all people, because the free treatment system was covered by the national social security.⁶

In 1953, individual farmers and commercial and industrial workers were excluded from the free treatment system by Cabinet Ordinance No. 203. In 1958, the separate social status of individual farmers, commercial workers, and industrial workers were abolished with the nationalization of their privately owned assets. Members of the agricultural and handicraft cooperative unions were included as recipients of free medical treatment. It was not until 1960 that all people were covered.⁷

⁵ Resolution on Practicing Medical Assistance and Reorganizing Industry Medical System for Laborers, Office Workers, and Their Dependent Families, which was enacted in 1946.

⁶ Ordinance on Practicing Free Treatment, which was enacted in 1952.

⁷ Ordinance on Reinforcement of People's Health Project, which was enacted in 1960.

b. Benefits

In the 1950s, the benefits from the free treatment system included exemption from expense for treatment and medicine for all inpatients. However, exemption from payment for medicine also applied to the recipients of social insurance and social security, laborers in national organizations and their dependents, laborers in cooperatives and social bodies, war veterans, and unusual patients.

Under the People's Health Act, the benefits currently include the free provision of treatment and medicine without any discrimination, including (a) medicines for inpatients and outpatients by medical institutions; (b) medical services such as diagnosis, experiment, treatment, operation, doctor's visitation, hospitalization, meals, etc.; (c) recuperation for laborers; (d) transportation fees for medical treatment, which are paid by the government or cooperative unions; (e) delivery assistance; and (f) preventive medical services such as health diagnosis, health counseling, and vaccinations.

Recipients also receive a subsidy as a sickness benefit, which is based on the Social Insurance Act. A condition for the subsidy is that the insured cannot receive wages for sickness, injury, and malformation, irrespective of the type of occupation. The amount of the subsidy is determined as the fixed rate of wages earned before temporary lay-off.

c. Finance

In the beginning, social insurance funded financing for medical security. The insurance rates were 5 to 8 percent of wages for national consumption cooperative unions, social enterprises, and organizations in the production sector; 10 to 12 percent of wages for individual workers and employers; and 1 percent of wages for insured laborers and office workers. The government was to cover the insurance administration cost. However, all financing for medical security in North Korea today is covered by the government's treasury.

d. Delivery System

The delivery system for medical security consists of four phases. The first, diagnosis and treatment, is conducted at first-level medical institutions such as *Ri*, *Dong*, *Rodongzaku* (labor district) clinics or hospitals. Professional diagnoses and treatments are conducted at the second-, third-, and fourth-level medical institutions, as necessary. The second-level medical institutions include the people's hospitals at the city (*si*) and county (*gun*) level. The third-level medical institutions include central hospitals, university hospitals, oriental medicine hos-

pitals at the province (*do*) level, and the large-scale hospital complexes and professional treatment institutions concentrated in Pyongyang. Most of the medical services end at the third-level medical institutions. However, patients with rare diseases or important persons in the party may be provided care at the fourth-level medical institutions.

This medical delivery system is linked to the nationwide doctor–district assignment system that is organized by administrative areas and consists of a resident location–based assignment system and work location–based assignment system. In urban areas, medical practitioners provide diagnosis and treatment services for 4,000 residents at hospitals and clinics. In rural areas, medical practitioners provide diagnosis and treatment services for 1,500 to 5,000 residents at county people’s hospitals and village clinics/labor district hospitals (about 1,000 residents per doctor). In industrial areas, factory clinics or hospitals provide the medical services.⁸

2. Income Security System

One legal basis for income security is the Labor Act, which regulates the compulsory social insurance system for laborers and office workers in enterprises, offices, and other economic fields. The other basis is the Social Insurance Act that regulates, as a form of social security, a variety of subsidies and pensions. The types of subsidies include temporary subsidy, delivery subsidy, funeral subsidy, and unemployment subsidy. The types of pensions include old age pension, survivor’s pension, and disability pension. The industrial accident compensation insurance is an income security for loss of labor ability owing to work accidents, diseases, and injuries, which was systematized under the Labor Act. North Korea classified the benefits funded by the insurance as social insurance, and the social works provided by the government were classified as national social security.

The farmers, who had been covered by the mutual aid system of the cooperative farms, were included in the national social security system on the basis of the Ordinance on Operation of Social Security System for Cooperative Farmers enacted in 1985. Thus, social security was completed, at least in its legal form. Although an unemployment subsidy was provided for by the Social Insurance Act, it has not been in effect since the Labor Act proclaimed that all laborers under socialism had a right to labor and that unemployment has disappeared forever in North Korea.

⁸ Seung Chang-ho and Lee Bock-hee (1986, 114–16).

a. Recipients

The recipients of old age pensions are the insured, ages sixty and higher for men and fifty-five and higher for women, who continue to pay their insurance premiums and have worked for a certain duration of time. The recipients of disability pension include those disabled by diseases or injuries, irrespective of the type of job, as approved by the insurance doctor. The recipients of disability pensions are divided into three classes. The first class includes those who are completely unable to work and who require another's care. The second class includes those who are disabled of their general ability to work. The third class includes those who are disabled of the ability to work continuously at regular jobs but who are able to work irregularly or for a reduced period of time, or who are able to work in other jobs with less capacity.

The recipients of survivor's pensions are the dependent family members whose livelihood had been maintained by the income of the insured. Conditions for receiving the benefits include death of the insured, death of the insured within fifteen days after lay-off, death of the insured receiving medical assistance, or permanent disappearance of the insured as adjudicated by the court.

A laborer, or the dependent family in the case of the laborer's death, becomes a recipient under the insurance system for industrial accident compensation when the laborer becomes disabled because of job-related diseases or injuries. This insurance compensation also applies to laborers who are disabled after being laid off.

b. Benefits

The benefits of old age pension can be paid in cash or in kind. As examples of cash benefits, the recipients who meet conditions for full benefits receive 60 to 70 percent of the monthly basic living cost (or the basic wage in retirement), and recipients who provided continuous services for fewer than twenty years receive 50 percent of that amount. The in-kind benefits include 400 grams of food, including 100 grams of supplementary rice. However, recipients who continue to work even after retirement can receive 100 percent of the basic wage and 700 to 800 grams of food according to their occupation. The disability pension is divided into four classifications by industry and occupation; on the basis of those classifications the recipients receive benefits proportional to the degree of their lost labor ability. (Refer to Table 12-1.)

Table 12-1. Criterion for Benefits of the Disability Pension

Classifications	Year of Work	Grade of Disability	Benefits (of average annual wage for the latest 1 year)
1. Underground laborers or laborers engaged in hazardous labor, exemplary laborers, and office workers in all jobs, technicians	Fewer than 10 years	1st grade	60%
		2nd grade	40%
		3rd grade	25%
2. Laborers in metallurgy, machinery, coals, mines, petroleum, quasi-alkali, rails, post-office, land transportation, marine transportation, fishery, engineering and construction, shipbuilding	Fewer than 10 years	1st grade	58%
		2nd grade	38%
		3rd grade	24%
3. All laborers except the above, office workers engaged in direct production within enterprise field, teachers, artists	Fewer than 15 years	1st grade	57%
		2nd grade	37%
		3rd grade	23%
4. Office workers not engaged in direct production	Fewer than 15 years	1st grade	57%
		2nd grade	37%
		3rd grade	23%

Note: Additional rate ranged from 0.5 percent of yearly average wage to 2 percent or 3 percent in case of exceeding the designated service years that are provided for workers.

The maintenance allowance for survivor's pension is paid in a lump sum for the survivors when an insured person with continuous service of three years or more dies, irrespective of the type of job. The amount of the maintenance allowance is to be differentiated according to the type of occupation as well as the number of dependent survivors. (Refer to Table 12-2.)

The amount of benefits from industrial accident compensation insurance is decided according to the level of disability. The recipients of the first grade receive 90 percent of their average annual wage for the most recent year, the recipients of the second grade receive 65 percent, and the recipients of the third grade receive 35 percent.⁹

⁹ There was an announcement that pension payments would be increased to an average of 50.7 percent starting in March 1992, for improvement of people's welfare (Ro and Yeon 1977, 75).

Table 12-2. Criterion for Benefits of the Survivor's Pension

Working Years	No. of Survivors	Percentage of the Average Amount of Annual Wages for the Whole Working Years	
Fewer than 10	1	85%	If continuous service duration exceeds 10 years, additional rates are applied at a certain level.
	2	110%	
	3 or more	135%	
Fewer than 10	1	80%	
	2	105%	
	3 or more	130%	
		70% for laborers 60% for office workers	

c. Delivery System

The agencies that are responsible for social insurance include the Department of Social Insurance, the Ministry of Labor at the central level, the Labor Agencies, and the Council of People's Commissars (CPC) at the local levels with a hierarchy of provinces (*si, do*) and city or county (*si, gun*). The Labor Agencies at provincial and city or county levels establish the Social Insurance Depository, Social Insurance Office, Social Insurance Investigation Committee (SIIC), and social insurance inspectors. A Social Insurance Office can be established by the employer of a workplace with 1,000 employees or more. The social insurance inspector is responsible for inspecting social insurance work. The first SIIC is organized in city or county levels, and the second SIIC is organized at the provincial level. SIICs play a role in investigating claims for benefits for social insurance. The SIIC is composed of representatives of occupational unions, labor administrators, representatives of employers, doctors, members of sanitation inspection committees, technology inspectors, representatives of the party, and social organizations. The members of an SIIC are appointed by the CPC at the provincial level with the approval of the CPC at higher levels. The committee is supervised by the director of the Labor Division. Appeals against the decisions made by the committee can be litigated in the courts.

The responsibility for operating social insurance was transferred from the Ministry of Labor to the Central Committee of the North Korean Occupational Alliance in 1958, on the basis of the Ordinance on Transferring the Managerial Function of National Social Insurance and Labor Protection Related Work to the Central Committee of North Korea Occupational Alliance. However, since February 1961, social insurance has been operated under management of the Minis-

try of Labor at the central level and by the Administrative Economic Guidance Committees at the local levels.

d. Finance

The premium for social insurance that is based on the Social Insurance Act is presented in Table 12-3. The government covers the cost of administering social insurance from the national and local government treasuries. Employers pay a premium at rates that vary according to the total amount of the wages and remuneration of the insured plus the degree of health risk at the workplace. The premium rates for government and organizations range between 5 and 8 percent of the worker's monthly wage, and the premium rate for the insured laborers and office workers is 1 percent of the total amount of wages and remunerations.

Since 1978 when the Social Labor Act was promulgated, a subsidy for the loss of labor ability for fewer than six months—which constitutes parts of the disability pension, the old age pension, and the survivor's pension—has been covered by the premium paid by the national enterprises. The disability pension for loss of labor capacity for six months or more is covered by the national budget, appropriated to the national social security.

Table 12-3. Criteria for Premium of Social Insurance in North Korea

Characteristics	Coverage	Related Acts
Administrative Cost	National and local governmental treasury	Social Insurance Act (Article 13)
Premium for the Insured	1% of remuneration	Social Insurance Act (Article 14)
Premium for Organizations and Bodies	5–8% of total amount of wage of the insured	Regulation for Premium Payment Procedure (1946)
Penalty for Delayed Premium	0.5% of the delayed premium after five days since wage payment	Regulation for Premium Payment Procedure (Article 4)

Source: Ro and Yeon (2000, 73).

Note: 1. Remuneration included extra payment, prize, allowance, in-kind grant, wage (Regulation for Premium Payment Procedure, Articles 7–9).

2. 5 percent of wage (administrative organizations, financial organizations, party, social organizations), 6 percent of wage (educational, medical, postal organizations); 7 percent of wage (fiber and clothing industries); 8 percent of wage (mines, engineering and construction industries) (On Execution of Social Security System for Cooperative Farmers' in 1985).

3. Public Assistance

In North Korea, public assistance has been regulated by a variety of laws. The public assistance system was concentrated on victims of war and veterans

in its initial stages. However, the public assistance system can be considered to cover social security as a whole. The state monopolizes all means of production and distributes the products to all laborers to materially and culturally compensate for their work and, thereby, to achieve the goals of the socialist state. One form of compensation is to secure people's livelihoods by providing the necessities of life free of charge or at low prices, in addition to wage and pension. In short, the state is responsible, through blanket subsidies, for all the costs of individual livelihood, as necessary, for controlling the people.

As a result, the social security system of North Korea, which is funded by the state treasury, aims at improving the quality of the material and cultural life of laborers in general rather than assisting the life of laborers with no ability to help themselves. Thus, the social security system in North Korea is characterized by an "all-ness of security" to secure an equal quality of life for all people including laborers and a "wholeness of security" to secure people for the whole of life against all kinds of social problems.¹⁰

a. Recipients

In a narrower sense, the recipients of the public assistance system are not the poor but rather the special classes such as soldiers (veteran, disabled, or aged), their dependent family members, civilian casualties of war, and immigrants from Japan and South Korea.

For example, the recipients of the benefits of the public assistance system—on the basis of the Resolution on Support for the Family of North Korean Soldiers and Staff Sergeants—include parents, wives, and children who were taken care of by soldiers and sergeants before they entered military service. Among the recipients, nonlaborers are fathers age 60 or older, mothers age 55 or older, wives with children age 5 or younger, children age 13 or younger, and the physically or mentally disabled. A state subsidy is provided if soldiers or sergeants were laborers or office workers in a family with a combination of laborers and nonlaborers, such as no laborers, one laborer with three nonlaborers or more, and two laborers with four nonlaborers or more. If the soldiers and sergeants were farmers and if there were either no laborers or one laborer with four nonlaborers or more, the agricultural tax in kind is reduced or the recipient is exempted.

¹⁰ Lee Doo-ho (1991, 235–36).

b. Benefits and Finance

The benefits of the public assistance system are diversified according to the type of recipient. According to the Resolution on Support for the Family of the North Korea Soldiers and Staff Sergeants, a subsidy is provided on the basis of the number of nonlaborers within the dependent family. The amount of subsidy is 200 won per month for only one nonlaborer, 300 won per month for two, and 400 won per month for three or more nonlaborers. Of the above amount, 80 percent is paid if the dependent family lives in a rural area. When a farmer enters military service, the agricultural tax in kind is reduced by 10 to 30 percent for his dependent family members.

Most of the laws related to public assistance regulate job mediation projects, which include occupational education, re-education programs, free land for farmers, provision of farm appliances, etc. For education security, the dependent family members of fallen soldiers and immigrants from Japan and South Korea receive educational expenses, school supplies, clothing, etc., free of charge. Special education is provided to the handicapped. Food, fuel, clothes, etc., are also provided under the public assistance system. Finance for public assistance is covered by the state.

c. Delivery System

The organization for public assistance varies with the types of benefits, but in most cases, associated ministries—such as the Ministry of Labor and the Ministry of Health at the central level and the People's Committee at local levels—play key roles in operating the system. There are some exceptions. According to the Ordinance on National Social Security, the social security agencies are responsible for regularly providing subsidies to those handicapped by war and the dependent family of dead soldiers, social security aid for the retired, and support for the dependent family of civilians attached to the military and for partisans. According to the Ordinance on Security for Job Mediation and School Attendance Conditions for Veterans and the Honorably Disabled, *koumissia* for labor security is organized in cities and counties to guide and inspect job security, educational attendance, and protection of veterans and the honorably disabled. According to the Resolution on Aid for War Victims, the heads of the CPCs at various levels are responsible for arranging a broad range of social aid in collaboration with representatives of the needs of farmers, women, the party, and other social organizations.

4. Social Welfare Services

In an attempt to improve women's welfare, the Act on the Equality of the Sexes (promulgated in 1946) regulates the equality of the sexes as a social right, which includes prohibition of polygamy, concubines, licensed and unlicensed prostitution, and women working as *kisaeng* (singing and dancing girls). To secure a healthy female labor force, the law protected women's health. For example, the Regulation on Maternity Hospitals (enacted in 1949), strengthens protection of women before and after childbirth and provides support for delivery. The Children Upbringing and Education Act (enacted in 1976), regulates establishing institutions for childbirth and nurturing. The People's Health Act puts an emphasis on health for women and children.

Viewpoints on child welfare in North Korea have varied. First, the aim of child welfare immediately following the Korean War (1950–1953) was to secure justification for the socialist regime regarding casualties of war. Child welfare was regulated to focus on children who were casualties of war, including orphans through the Ordinance on Establishment of Primary Institutes (Schools) at Various Administrative Levels for Children of the Patriots and War Orphans (enacted in 1953), and the Ordinance on Reinforcing Improvement of Work for Child School, Primary School, and Child Welfare Facilities (enacted in 1958).

Second, child welfare was aimed at reinforcing the social rearing of children in order to help secure the female labor force so it could cope with the shortage of labor.¹¹ Hence, child welfare was focused mainly on children younger than school age; the basic direction of policy was to bring up children age three or younger in pre-kindergartens and children aged four and five in kindergartens. Under the Cabinet Resolution on New Measures for the Improvement of the Kindergarten Program (enacted in 1964), the number of kindergartens rapidly increased.¹² An "upper class" of kindergartens for children aged five was created in 1975 as a part of the compulsory education system by the Ordinance on Whole Execution of 11 Years' Compulsory Education (enacted in 1975).¹³

¹¹ The Regulation on Pre-kindergarten (enacted in 1947) regulates that pre-kindergarten is responsible for rearing babies for female laborers.

¹² The labor force participation rate for women was 20.2 percent in 1955 but increased to 33.3 percent in 1960, 38.5 percent in 1965, and 40.4 percent after 1975. The number of pre-kindergartens increased to 35,361 in 1970 when 1.44 million children were covered (North Korea Central Yearbook (1984), 292; Kim Young-jong (1992, 168).

¹³ North Korea adopted "the whole compulsory education system of eleven years" in September 1975, i.e., one year of high level kindergarten, four years of primary school, and six years of middle school, all of which were to be completed by the time the children become seventeen years old (North Korea Democratization Network 2003, 96).

Third, child welfare was used as a means of instilling *juche* ideology in children and of bringing up children as revolutionary warriors. For example, the Children Upbringing and Education Act states that all children should be educated in new revolutionary ideology and *juche* and that women should be set free from the hard burden of bringing up children. The compulsory education system of North Korea has also put emphasis on early education on socialism and *juche* ideology.¹⁴

However, the welfare of the aged and the disabled has been neglected, because they were considered unable to provide labor for socialist industrialization. The welfare services for the aged and the disabled are partly regulated by laws. For example, the welfare for this group is currently based on Article 78 of the Labor Act, which provides that the aged and the disabled without labor ability and careers are to be taken care of by social welfare institutions. According to the Ordinance on State Social Security (enacted in 1951), the state must also carry out programs for the aged, which include job security, housing security, distribution of living necessities, and expansion of relevant institutions.

Protection services for the disabled, focusing on support services for those injured in war, have been provided. However, welfare service for the disabled in general has been limited to accommodative protection with a low quality of service. This low-quality service is attributed to the social prejudice against the disabled. The aged and the disabled with labor ability are assigned productive work even in the social welfare institutions.¹⁵

5. Women's Welfare

a. Recipients

The women's welfare service was formed to justify the Communist regime in the beginning of constructing a socialist state and to secure the female labor force; hence, the recipients of women's welfare services are women.

b. Benefits

The Act on the Equality of the Sexes regulates equal rights in labor, wage,

¹⁴ North Korea Democratization Network (2003, 96).

¹⁵ One institution for the disabled is established in each province, but the authority has adopted a discriminatory policy to separate the handicapped from society by migrating them to certain areas such as remote mountain villages.

social insurance, education, and cultural life; the right to liberal divorce; the right to alimony from husbands; and the prohibition of polygamy, concubines, prostitution, and women working as *kisaeng*. The Ordinance on Women's Consultation Centers (enacted in 1948) regulates the functions of the women's consultation center for protecting women's health, including the establishment of clinical measures, support for sanitary physical education, employment and job transfers for unmarried women, protection of working women and pregnant women, prevention and treatment of women's diseases to protect pregnant women's health, prevention of induced abortion, protection of middle-aged women against cancer, publicity for sanitation, and legal aid. According to the Ordinance on Maternity Hospitals, maternity hospitals were to be established to protect the health of women before and after childbirth, plus helping in delivery of children.

The Children Upbringing and Education Act (enacted in 1976) regulates night labor for women who are bringing up children or are pregnant. The Labor Act regulates maternity leaves before and after child delivery, besides regular and complimentary vacations. The period of maternity leave was thirty-five days before delivery and forty-two days after delivery with a payment of a temporary subsidy—regardless of years of service—in the beginning of its practice. In 1986, the period was prolonged to 150 days, composed of 60 days before delivery and 90 days after delivery. In 1993, the Regulation of Children Upbringing and Education Act increased the duration of the maternity leave, but this increase was not realized because such an increase was considered a hindrance to achieving the production target and mobilizing the labor force.¹⁶

According to the constitution, children from unwed mothers are to have the same rights as children from normal marriages. North Korea abolished the family register system and discrimination against children who are brought up in groups such as in pre-kindergartens. However, unwed mothers are apparently expelled to compulsory labor camps.¹⁷

c. Finance

The women's consultation centers are operated on the basis of a free treatment system funded by the state treasury. Expenses for maternity leaves are covered by the state and social cooperative organizations. According to the People's Health Act (article 13), women on maternity leave and their dependent

¹⁶ Ro Young-hwan and Yeon Ha-chung (1997, 91).

¹⁷ Lee Tae-young (1988, 66–67).

family are provided with food, subsidies, and other types of distribution by state and social cooperative organizations.

d. Delivery System

The Ministry of Labor is responsible for protecting women's rights in labor and maternity leave. The Ministry of Health, centering on women's consultation centers, is responsible for providing medical security for women. The women's consultation centers are established in provinces, cities, and counties. Their functions include the prevention and treatment of diseases for women's health, the transportation of pregnant women to delivery facilities, and the hospitalization of sick pregnant women in special beds as early as possible. The center is staffed by a director, medical doctors, and midwives. Midwives are responsible for visiting pregnant women at home, examining and registering them, and helping with their delivery at home, if necessary.

6. Child Welfare

a. Recipients

In North Korea, recipients of child welfare include all children because its principle is the social upbringing of children to become revolutionary warriors and laborers. Children between thirty days and three years of age enter pre-kindergartens and those four to five years of age enter kindergartens. All children are registered in child consultation centers within one week after delivery. Orphans enter child welfare institutions (infant- and child-rearing homes). There are special pre-kindergartens and kindergartens for revolutionary patriots' children.

b. Benefits

The state operates pre-kindergartens and kindergartens for children up to five years of age, where meals, health protection, clothing, school supplies, education, etc., are provided. These pre-kindergartens provide services eight to twenty-four hours per day, and can be classified into daily, weekly, and monthly pre-kindergartens, according to their service duration. Pre-kindergarten can also be classified—by unit of establishment—into farm work detail pre-kindergarten, *Ri* pre-kindergartens, factory pre-kindergartens, laborer district pre-kindergartens, and town pre-kindergartens.

The daily pre-kindergartens, which serve the children of parents involved in

simple labor during the day, are established by work or administrative unit. Weekly and monthly pre-kindergartens are for the children of parents who are on long-term dispatch or on long-term journeys or who are performing duties in local areas, attending training, or receiving education. Parents can take their children home once a week from the weekly pre-kindergartens and two or three days per month from the monthly pre-kindergartens. Each weekly and monthly pre-kindergarten is established for every two districts in the three great cities such as Pyongyang, Hamhung, and Chongjin. Two or three pre-kindergartens are established in each small or medium city, and one or two pre-kindergartens are established in each county. The child consultation center provides consultation and sickness prevention services for children through regular home visits by a nurse.

c. Finance

In the beginning, the pre-kindergarten could receive—with the approval of the director of the authorized committee—actual expenses for meals for children, not to exceed 10 percent of the parent's income. According to the Children's Upbringing and Education Act, the state secures food and medical care, and it provides clothes and schooling supplies at production (or lower) prices by covering the difference between the supply and production prices with the government budget. However, in 1958, when individual enterprises were abolished, all kinds of children's institutions became nationalized and the state has since been responsible for all of their financial needs.

d. Delivery System

The Ministry of Health at the central governmental level and the Health Administration Agency under the CPCs at the local levels are responsible for managing and operating pre-kindergartens.¹⁸ The staff at pre-kindergartens is supposed to consist of qualified nurses or midwives and of nursery school, primary school, or kindergarten teachers. The Association of Pre-Kindergartens, which consists of pre-kindergarten staff members, parents, representatives of social organizations including industrial organizations, and representatives of women's advocates, is organized nationwide to drive the pre-kindergarten program.¹⁹

¹⁸ According to the regulation concerning pre-kindergartens, each pre-kindergarten is to report—in the form prescribed by the Ministry of Health—details of undertakings, health status of children, finance, accounting, and medical care to the Health Administration Agency within a prescribed time.

¹⁹ Regulation on Pre-Kindergarten (1949).

The Kindergarten Office of the General Education Department under the Education Committee at the central level, plus the Education Agency and the Education Division at the local levels, will take responsibility for managing and directing kindergartens. The management system of child consultation centers, which consists of a director, medical doctors, and nurses, has the same service delivery system as the pre-kindergartens.

7. Welfare for the Elderly

a. Recipients

The recipients of aid from senior welfare institutions are those aged sixty or older for men and fifty-five or older for women who cannot meet the requirement for full continuous service years to be eligible for old age pension and are helpless without any labor capability.²⁰ Aged persons who have a supporter do not qualify for aid from the welfare institutions for any reason.²¹ The recipients of the old age pension were discussed earlier.

b. Benefits

Although seniors are entitled to become recipients of old age pension by law, most are forced to work in a domestic team or side job team under the slogan “those at age of sixty are young, and those at age of 90 are sexagenarian.” Thus, aged people tend to receive wages for work rather than the state’s pension. Aged persons who do not qualify for social insurance and have performed continuous service of fewer than twenty years are entitled to receive 500 grams of food under the name of their adult children.²²

c. Finance

In North Korea, the cost of welfare services for the elderly is covered by the

¹⁸ According to the regulation concerning pre-kindergartens, each pre-kindergarten is to report—in the form prescribed by the Ministry of Health—details of undertakings, health status of children, finance, accounting, and medical care to the Health Administration Agency within a prescribed time.

¹⁹ Regulation on Pre-Kindergarten (1949).

²⁰ As of 1988, in North Korea the number of the aged living in institutions for the aged accounted for 14 percent of the total aged population (Ministry of Reunification, Korea, 1995).

²¹ North Korea Network, *Chungang Daily Newspaper* (1999).

²² Ahn Kye-chun (1989, 62–63).

state. Nevertheless, most elderly people, except those without the ability to work, have to work for social benefits.

d. Delivery System

To serve people who are crippled and elderly and who are without labor ability and support, one recuperation institution (*Yangsangwon*) is established in each province, and elderly welfare institutions (*Yangnowon*) are established in major cities and counties. The Bureau of Labor in the Provincial People's Committee under the Ministry of Health is responsible for administering the elderly welfare institutions, admission to which can be obtained from the Labor Division of the City or County People's Committee after passing an application process.²³

8. Welfare for the Disabled

a. Recipients

In the 1950s, the recipients of the disability welfare system were those disabled by war, including some civilians. However, since 1976, when the Labor Act was enacted, the scope of recipients has been expanded to include all disabled persons without labor ability.

b. Benefits

The benefits from the disability welfare system include education security, medical security, occupational security, livelihood protection, housing security, and residence in welfare institutions.

The war-disabled are provided with free education up to the level of high school as part of the re-education program. The state established honorable military manufacturing schools, honorable military agricultural schools, and honorable military statistical accounting schools for those disabled by war. The graduates are obligated to work for two years in enterprises or organizations relevant to their fields, and as appropriate to their own health and skill levels. The honorable war-disabled have opportunities for higher levels of education as they desire. Production enterprises for disabled veterans with some labor ability were also

²³ *Ibid.*

established.²⁴ War-disabled candidates for farming have priorities in the provision of land, house, seed grains, and farming appliances. Income is also secured for the disabled—in ways previously explained.

As for medical security, all treatment, correctional equipment, and monthly periodical diagnoses are provided free of charge. For disabled veterans, honorable military hospitals for long-term treatment service, honorable military recuperation centers (*Jungyangso*), and recreation facilities for long-term treatment and recuperation were established.²⁵ As for housing security, the boarding houses for handicapped laborers, special child institutions for handicapped orphans, schools for the blind and mentally challenged, and institutions for the disabled were established. Forty-nine (“49”) recuperation facilities were also established to accommodate the mentally disabled.

However, some severe social discrimination against the disabled exists in North Korea. Welfare for the disabled is limited to accommodation, and discrimination generally exists in the distribution system and in the wage criteria for the disabled, criteria that are not obeyed.²⁶ Institutions for the disabled can also be considered social discrimination against the disabled in some regards.

c. Finance

The costs for the welfare of the disabled are covered by the state.

d. Delivery System

At the central governmental level, the Ministry of Education is in charge of providing education, the Ministry of Health is in charge of medical security, the Ministry of Labor is in charge of occupational security, the State Planning Committee is in charge of livelihood security, and the Ministry of Agriculture is in charge of institutional protection. In local government, the director of the Provincial People’s Committee is responsible for administering the welfare system to the disabled. A welfare institution for the disabled and a “49” hospital are established in each province, and a “49” recuperation facility is established in each county.²⁷

The supervisory committee (*koumissia*), consisting of government, party, and social organizations, supervises the welfare services for the disabled. The func-

²⁴ Research Institute for North Korea (1983, 1512).

²⁵ Ministry of Reunification (1990, 267).

²⁶ Naewoe New Agency No. 1035 (1996).

²⁷ A testimony from Kim Man-chul, a North Korean defector to South Korea.

tion of such organizations is limited to welfare services for the veterans and the honorable war-disabled, as necessary for the justification of the regime, but the organizations were not established for the needs of the disabled in general. According to the law, a supervisory committee for labor security should be established in every city and county.

B. Problems of the Social Welfare System in North Korea

1. Problems of the Social Security System

a. Medical Security

In the beginning, the medical security was based on the social insurance system, and was accorded with the principles of socialism. Its basis was transferred to the social security system, because social insurance could not cover the increase in recipients caused by the war. Medical security has been used to maintain the regime internally, to secure a healthy labor force for economic development, and, thereby, to control the people. It also aims to publicize the regime internationally.

However, the medical security system in North Korea has been all but demolished because of the collapse of the supply system for medical equipment and drugs, as well as the doctor–district assignment system, which, in turn, resulted from the long periods of economic difficulties and from the suspension of aid supplied by the former Soviet Union and Eastern European countries since the early 1990s. The considerable increase in the number of deaths in the mid-1990s was attributable to food shortages, as well as to the collapse of the medical security system. The main problems of the medical security system in North Korea can be summarized as follows.

First, the inherent problem with the system is the shortage of medical resources. The lengthy period of a poor economy led to a lowered operation rate with the drug industry to 20 percent or less during the 1990s, resulting in the lack of essential medical supplies—or less than 10 percent of the target amount. It also became impossible to import modern medical instruments and equipments because of the poor economy. International aid supplying medical drugs and appliances, mainly from the former Soviet Union and Eastern European countries, was suspended in the early 1990s. As a result, production and distribution of medical drugs and appliances no longer functioned.²⁸ This lack, in turn, led to

²⁸ Lee Sam-sik (1998, 64).

critical medical problems such as negligence of patients, suspension of operations, and increasing instances of operations performed without anesthesia.²⁹ Under the People's Health Act, the authorities placed an emphasis on preventive medical services and programs, including a system of epidemic prevention, hygiene improvements, vaccinations, diagnoses, and traditional Chinese medical treatment as a response to the lack of medical resources. However, vaccinations seemed to be mostly ineffective, because such a program depends on people's voluntary participation.

Second, another problem inherent in the North Korean medical security system is in its system of delivery. The operation of the doctor–district assignment system is structurally rigid and is under powerful administrative control. Thus, a patient's choice is very restricted. Furthermore, no improvements in the quality of services could be expected because there was no competition among medical personnel.³⁰ Although the doctor–district assignment system was designed to improve people's access to medical services, patients' access is restricted because they must be issued a pass or a certificate in order to use the second- or third-level medical institutions outside their city or county of residence. The burden for medical services outside the residential districts was considerable, because outside inhabitants were forced to pay additional costs to receive treatment and to purchase drugs from pharmacies. Doctors had to spend more than half of their weekly working hours in nontreatment duties such as health education, hygiene and sterilization, vaccinations, and physicals, but they lacked motivation because of the fixed amount of living costs, which inevitably led to lower qualities of medical services.

Third, medical security suffers from a lack of finance. Although medical security in North Korea is based on a free treatment system financed by the state, the burden on the people increased because of the poor economy and food shortages. In reality, workers in organizations have to pay 5 to 8 percent of monthly wages, and individual residents must pay about 1 percent of their monthly remuneration for medical security. Cost for treatment is also included in many public charges, and dependent family members who do not have jobs must pay for treatment and drugs when using medical offices.³¹

Last, one of the main problems inherent in medical security is that all health

²⁹ According to some North Korean defectors to South Korea, because of a lack of medical drugs and appliances, only 30 to 50 percent of patients were treated, folklore remedies prevailed, and hospitals asked patients to purchase the necessary drugs at the markets (Lee Sam-sik 1998, 63).

³⁰ Ro Young-hwan (2000, 32–33).

³¹ *Ibid.*, 32.

and medical resources have been nationalized, and the production and distribution system, which operates under the framework of the planned economy, is rigid and bureaucratic. There are differences in the quality of medical services provided to members and nonmembers of the party, and special medical institutions exist for officials who are in responsible posts in the party.³² Such inequalities in medical service were exacerbated by the shortage of medical resources.

b. Income Security

Although income security in North Korea was adopted in the form of social insurance, consisting of a pension and industrial accident compensation insurance, there have been no measures to provide security for the income of the nonrecipients of insurance, including the unemployed.³³ Even recipients of social insurance have had to work for social benefits because of the poor economy, food shortages, and labor shortages. Income security, including the disability pension, is not universal and is restricted to special social classes such as the honorable disabled veterans.

2. Problems of the Public Assistance System

Because the recipients of the public assistance system are restricted to special classes such as patriots, military soldiers, and military civilians, public assistance seems to be similar to a reward system and is not sufficient to cover the poor class through a comprehensive system. However, the public assistance system in North Korea was designed to secure the universal livelihood of all people under the premises of the “allness of security” and the “wholeness of security.” The system is based on the principles of socialism, rather than on securing simply the livelihood of the poor who cannot support themselves.

Such a system is aimed at maintaining the socialistic system, under which the state monopolizes all production means, directs production, and distributes products through central planning. However, such a system is likely to be very vulnerable to internal or external effects because it completely relies on the state

³² The hospitals exclusively for use by officials of the party and government include the Namsan Medical Center, the Bonghwa Medical Center, and others, which are separate from the ordinary hospitals. There is reportedly a big difference between them in the level of medical facilities and the quality of medical services (*ibid.*, 35).

³³ Because the factory operation rate in North Korea was 10 to 20 percent and it was difficult to pay wages to all laborers, the mass unemployment would create a serious social problem. See North Korean Democratization Network 9, no. 27 (2002): 8.

budget. For example, the food shortage in the mid-1990s led to the collapse of the food distribution system, which resulted in mass starvation.³⁴

3. Problems of the Social Welfare Service System

The social welfare system of North Korea has concentrated on women and children to secure the labor force needed for socialistic industrialization and to infuse Kim Il-sung's *juche* ideology into children from an early age. It has neglected the welfare of the elderly and the disabled who were unable to provide labor.

However, pre-kindergartens and kindergartens managed by child welfare are characterized by poor services and actually hinder the children's emotional development. According to a UNICEF report that was based on data from the Health Ministry of North Korea, in July 1997 about 800,000, or 37.6 percent, of all children under six years of age suffered from malnutrition.³⁵ The increase in the infant mortality rate in North Korea was ascribed to a decrease in the duration of breast-feeding caused by mobilizing mothers for work, which thereby led to malnutrition of children.

The elderly in North Korea can secure their own livelihood in return for their labor. If one considers the food shortages and bad economy, welfare institutions for the elderly also seemed to be very poorly operated. The elderly have no options but to rely on their family for their livelihood, because of the poor benefits from the old age pension.³⁶ The welfare service system for the disabled is also very poor in general, and it is concentrated on the disabled veterans.³⁷ Moreover, the residence of the disabled is restricted to confined areas for the purpose of propaganda to the outside world.

C. Concluding Remarks

Regardless of the political system, all people are entitled to a decent life. To

³⁴ There are different reports concerning the food distribution system of North Korea. One claims that the system was abolished. Another claims that the system was still in effect, but the price for distribution rose. The latter report is more reliable than the former. Regarding this claim, the *Choson Shinbo* said, "For the equal distribution of food, wage was secured for laborers who were issued distribution tickets to purchase the rice. People could buy the rice at 44 won instead of 0.8 won." See North Korea Democratization Network 9, no. 27 (2002): 3.

³⁵ Lee Sam-sik, Ro Young-hwan, Back Hwa-jong, and Kwon Tae-hwan (1999b, 36).

³⁶ Lee Sam-sik, Cho Nam-hoon, Back Hwa-jong, and Son Soo-jung (1999a, 146–47).

³⁷ Chung Gyong-bae, Kim Ki-ok, Kim Song-ho, and Lee Song-eun (1992, 36–37).

that end, the state should consider welfare as its most important goal. North Korea regulates welfare through its laws. However, in reality, except for the ruling elite, most people are imposed with hard work at minimum wage and receive limited amounts of food in return. In other words, social security in North Korea is in desperate conditions. The welfare policy in North Korea can be considered nothing more than a ruse to mobilize people for the ultimate goal of constructing a socialist regime.³⁸

Dramatic transitions need to be made to institutions, financial structures, and delivery systems so North Korea can turn social security into a reality. Institutionally, the inequalities of social welfare and the preferential services provided to the ruling elite and special classes should be abolished. Financially, the source of financing should be restructured for universal social welfare. However, the overall financing for social welfare cannot be borne by individuals and organizations, with the prevailing social and economic situations. Given that the state has to play a principal role in social welfare and social security, financing needs to come from the state treasury by allocating funds from the defense budget into social welfare. To modernize and democratize the welfare delivery system, the bureaucratic system must be reformed.

In recent years, a series of economic measures have been put in place to meet the goals of economic development by improving the economy's efficiency and, thereby, maintaining the political system. Those measures include enforcement of the People's Economy Planning Act of 1999, the implementation of economic management adjustment measures on July 2000, and the designation of special economic district. Such measures are meant to emphasize utilitarian socialism, through which economic management is improved to obtain maximum profits while maintaining the principles of socialism.³⁹ However, such economic efforts can cause a negative impact on social welfare because the social security system is not operating properly. For example, new economic measures have abolished the system for distributing food and necessities, and people now must purchase them directly from national markets and food markets at high prices, thereby reducing the state's burden for subsidies. However, most people without a secure income cannot afford to live without those subsidies. Therefore, any type of economic reform in North Korea must be accompanied by an improvement in social welfare for the good of the people.

³⁸ Kim Young-jong (1992, 168–74).

References

- An Kye-chun. 1989. *A Survey on Living of Residents in North Korea*. Seoul: Ministry of Reunification.
- Chung Kyung-bae, Kim Ki-ok, Kim Sang-ho, and Lee Sang-eun. 1992. *A Comparative Study on Social Security System between North and South Korea*. Seoul: Korea Institute for Health and Social Affairs.
- Institute for Peace Affairs. 1997. *Handbook for Reunification and North Korea*. Seoul: Institute for Peace Affairs.
- Kim Man-doo. 1982. *Introduction to Modern Social Welfare*.
- Kim Young-jong. Autumn 1992. "Welfare Administration Policy of North Korea." *North Korea Study* 3, no. 3: 168–84. Seoul: Daeryuk Research Institute.
- Lee Doo-ho. *An Essay on National Medical Care*. Seoul: Nanam, 1991.
- Lee Sam-sik. 2000. "Level of Starvation in North Korea and Its Policy Implications." *Health and Welfare Policy Forum*, Vol. 43. Seoul: Korea Institute for Health and Social Affairs, 62–70.
- Lee Sam-sik, Cho Nam-hoon, Back Hwa-jong, and Son Soo-jung. 1999a. *Demographic Transition in North and South Korea and Their Implications, and Social and Demographic Policy Directions in Reunification*. Seoul: Korea Institute for Health and Social Affairs.
- Lee Sam-sik, Ro Young-hwan, Back Hwa-jong, and Kwon Tae-hwan. 1999b. *Population Projection for North Korea*. Seoul: National Information Agency.
- Lee Tae-young. 1988. *A Study on Females in North Korea*. Seoul: Ministry of Reunification.
- Ministry of Reunification. 1995. *1995 North Korea Synopsis*. Seoul: Ministry of Reunification, p. 12.
- . 1998. *Weekly Trends for North Korea*. Vol. 367. Seoul: Ministry of Reunification.
- Naewoe Agency. 1996. *Naewoe Correspondence*. No. 1035.
- Nam Keun-woo. *Institute for Peace Affairs* (Internet). Accessed www.ipa.re.kr/f_index_Kor.hzm.
- North Korea Democratization Network. 2002, 9. *Keys*, Vol. 27. Seoul: North Korea Democratization Network.
- . 2003, 2. *Keys*, Vol. 32. Seoul: North Korea Democratization Network.
- . 2003, 9. *Keys*, Vol. 38. Seoul: North Korea Democratization Network.
- North Korea Network. 1999. *Societal Aspects of North Korea*. *Joongang Daily Newspaper*.
- Research Institute for North Korea. 1983. *A Comprehensive Bibliography for North Korea*. Seoul: Research Institute for North Korea.

- Ro Young-hwan. 2000. "Evaluation on Health and Medical Care Functions of North Korea and Basic Directions for Policies for Supporting North Korea." *Health and Medical Care of North and South Korea*. Vol. 1, 12: 27–46. Aju Institute for Health and Medical Care of North and South Korea.
- Ro Young-hwan and Yeon Ha-chung. 1997. *Evaluation on Policies for Livelihood Security of North Korea: Focus on National Distribution System*. Seoul: Korea Institute for Health and Social Affairs.
- Seung Chang-ho and Lee Bock-hee. 1986. *Experience in Projects for People's Health*.

Chapter 13

Science and Technology Sector

A. Analysis of the Current Status

On 1 July 2002, North Korea announced a set of decisive measures to improve its economy. As has been the case in China, economic reform of a socialist country is often accompanied by a radical reshuffling of its science and technology system. In fact, North Korea has long held a principle of putting science and technology reform ahead of economic reform, which is well reflected in such measures to improve the North Korean economy. Examples of such a move include a national policy focused on science and technology, a nationwide drive to make the country powerful and wealthy through scientific and technological developments, the designation of a “Year of Science,” and the personal visits by Kim Jong-il to the North Korean Academy of Sciences.

Not surprisingly, a significant portion of the measures currently in place for economic management was first implemented in the early 1990s. Similarly, many current policies for science and technology reform are reiterations from the 1980s. The development of two additional Five-Year Plans for Science and Technology Development (1998–2002, 2003–2007) in ten years—even after the development of two Three-Year Science and Technology Development Plans while implementing the third Seven-Year Plan—further testifies to North Korea’s emphasis on science and technology. In this chapter, we will examine the changes in North Korean policy on science and technology and the transformations in the North Korean science and technology sector, especially in relation to the recent economic revolution.

1. Changes in Science and Technology Policy

a. Emphasis on the Role of Science and Technology as an Engine for Economic Growth

In socialist countries, one common phenomenon is strong growth in heavy chemicals industries supported by intensive investment of labor and resources by the government's central planning unit. Therefore, improvement in productivity spurred by technological advancements is a rare occurrence. To make matters worse, North Korea has been suffering from a prolonged reduction of use of its plant capacity, from reduced revenues and diminished foreign trade that resulted from the market collapse of socialist countries, and from a series of natural disasters that have deprived the country of its capability to fund its economic growth. Moreover, North Korea's labor productivity remains extremely low owing to the sluggish automation of the production system and the lack of workers' motivation and morale. In addition, an extended obligation of national military service for young North Koreans has deprived the country of a potential labor force.

The North Koreans' emphasis on science and technology emerged as the country tried to improve their productivity without using additional capital or labor. The North Korean model for increasing productivity focuses on the reallocation of resources to practical areas, the development of technology, and the training of its labor force for improved quality. Those moves are all supported by North Korea's emphasis on science and technology as part of the country's plan to construct a powerful and wealthy nation. The designation of a Year of Science, the more frequent visits of Kim Jong-il to the North Korean Academy of Sciences, and the emphasis on science and technology in the economic improvement measures all reflect such moves.

Even in the late 1980s, science and technology were considered important factors for successful economic growth. In this context, two Three-Year Plans for Science and Technology Development and one Long-Term Science and Technology Development Plan for the period until 2000 were launched in conjunction with the third Seven-Year Plan. North Korea's policy is along the same line as that of China in the mid-1980s, when the Chinese reformed their economic, scientific, technological, and educational systems in order to make the country wealthier through science and technology development. However, unlike China, North Korea suffered a major blow in its journey toward reform, which is why North Korea is still emphasizing the role of science and technology in its current efforts toward transformation.

b. Balance between Research in Advanced Technologies and Support for Production Technologies

Since the late 1950s, North Korea has focused its research efforts on troubleshooting in the area of production. As a result, the main role of the North Korean Academy of Sciences was to support research related to production technologies. Except for some specific periods in the late 1950s and the late 1980s, North Korea had a very minimal national plan for developing advanced science and technology. North Korean research institutes were mostly engaged in research related to economic development, which focused on technological support for production. The research was concentrated on national infrastructure, such as electricity, coal, metal, and transportation, to support the national economy. Examples of this type of research include the introduction of a steel-making process using locally produced anthracite coal and the local production of chemical products such as Vinyon.

However, North Korea has recently shifted from its long-held policy oriented toward production technology and is now seeking a balance between technological support for production and research into advanced technology. Such a policy shift was the outcome of the understanding that developing advanced technologies and improving technological capabilities are critical elements for improving productivity through science and technology. It was in this context that Premier Hong Sung-nam emphasized the diligent execution of the concluding Five-Year Plan for Science and Technology Development and the Key Initiatives for Advanced Science and Technology Development at a National Scientists and Engineers Convention held on 25–26 March 1999. In accordance with such a shift, North Korea has developed a new Five-Year Plan for Science and Technology Development (2003–2007) and is now actively implementing the new plan.

In the new plan, which is similar to those from the late 1980s, a special emphasis has been placed on electronic engineering, bioengineering, thermal engineering, and development of new materials. The respective focuses of the various fields are as follows: (a) automation and electronic components manufacturing for electronic engineering, (b) cell biology and genetic engineering for bioengineering, (c) fuel efficiency improvements of thermoelectric power plants for thermoengineering, and (d) development of specialty steels needed by the machinery and defense industries for new materials development. As those advanced technologies are successfully developed, the science and technology community, whose role has long been marginalized as supporters of industries, will be able to assert North Korea's independent status and, ultimately, gain sufficient momentum to lead and create industries in the future.

c. Focus on Technology Renovation and Diffusion through IT Systems

Today, information technology (IT) has emerged as one of the most important elements at production sites in North Korea. North Korea's IT initiatives are focused on technology renovation and diffusion of renovated technologies through IT systems, as well as on the overall development of the IT industry. Technology renovation driven by IT is aimed at dramatically enhancing production capacity by introducing automated and modernized production processes into outdated production facilities. According to statistics, infrastructure industries such as electricity, energy, metals, and machinery account for 50 percent of North Korea's total investment in the technology renovation effort.

North Korea is also aspiring to achieve world-class performance in different sectors of its economy by diffusing advanced IT systems throughout the nation's economy and, thereby, swiftly resolve issues facing the North Korean economy. For this purpose, North Korea is striving to expand its scope of research and investment, plus human resources development in the IT sector. North Korea is focusing particularly on the automation of the machinery industry to improve productivity. As a means of driving this effort, North Korea is placing high priorities on IT subsectors, such as automation programming, automation components (e.g., computers, sensors, and semiconductors), telecommunication equipment, and information services.

Technology diffusion is also an important part of the North Korean policy on science and technology. If one considers the fact that the country is faced with limited resources for research and development (R&D) investment, it is becoming more important than ever to collect and distribute up-to-date information from various sources, including foreign science and technology journals. In addition, locally developed ideas for technology innovation are often presented at various exhibitions and science fairs, and the information is circulated through publications to make it immediately available for application at production sites. Those events are useful tools for promoting a mindset that highly values science and technology and for activating technology transactions. In return, people who develop innovative ideas earn both fame and economic rewards.

2. Restructuring the Science and Technology System

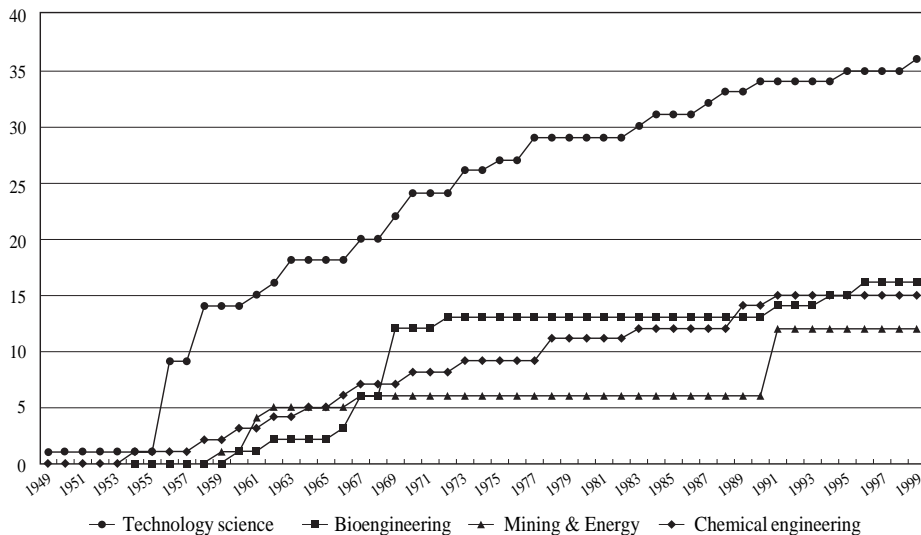
a. Restructuring of the North Korean of Sciences

What distinguishes the North Korean R&D system from that of other socialist countries is its heavy dependence on North Korean Academy of Sciences, which is devoted to supporting production technologies. Until the 1980s, most

national projects were carried out by research institutes affiliated with the Academy of Sciences and under the guidance of the Academy. Research activities in the universities and private sectors were minimal, except in some areas.

The basic organizational framework of the Academy of Sciences was already formed by the 1960s and only a few new supplementary research institutes have been added since then. Most were created in the 1990s and are under the direct management of the Academy of Sciences; they concentrate on engineering science. Various organizations affiliated with the Academy of Sciences also run their own research institutes, focused mostly (a) on researching bioengineering in order to support agriculture and (b) on coal technology to resolve energy issues. (See Figure 13-1 for historical research trends in North Korea.)

Figure 13-1. Historical Trend of Research Institutes under the Academy of Sciences



However, the Academy of Sciences has suffered tremendous hardships, starting in the late 1980s, from the collapse of the Soviet bloc. Stagnant foreign trade and a series of natural disasters were culprits in the regression of the Academy of Sciences. The declining North Korean economy also affected research institutes under the various government ministries, and many of them shut down as the ministries cut their funds. In 1994, in an attempt to overcome those challenges, North Korea strengthened the function of the Academy of Sciences by integrating ministry-affiliated research institutes into it and renaming it the National Academy of Sciences.

However, such restructuring was not enough to effectively control individual

research institutes, which were preoccupied with generating profits in the face of reduced financial support. As a solution, North Korea merged the National Academy of Sciences, its national research body, with the National Science and Technology Committee, an administrative organization, in September 1998. With the merger of the two organizations, the Standards and Quality Supervision Bureau was shifted to the Cabinet while the Invention Bureau, the Technology Guidance Bureau, and the Technology Screening Bureau went under the direct control of the Academy of Sciences. A series of additional restructuring took place: the Academy of Agricultural Sciences was absorbed into the Ministry of Agriculture; the Academy of Medical Science and the Oriental Medicine Research Institute, into the Ministry of Health; and the Academy of Forestry Science, into the Ministry of Environmental Protection.

In December 2001, North Korea carried out an organizational restructuring of research institutes affiliated with the Academy of Sciences. Under this restructuring initiative, forty-two research institutes in the Eunjung District in Pyongyang under the direct control of the Academy of Sciences and eleven research institutes under a branch of the Academy of Electronics and Automation were incorporated into the Eunjung Branch of the Academy of Sciences. In addition, about twenty research institutes, including ten whose research performance had been sluggish, were closed or absorbed. Nowadays, the pragmatic principle of valuing operational efficiency has been established as a common practice in the North Korean science and technology community.

Currently, employees at the Academy of Sciences number about 12,000, of whom 3,000 are researchers and the rest are technical advisors or administrative staff members. Because the actual data on the budget of this giant organization and the overall amount of investment in R&D have not yet been released, North Korea's investment in science and technology has been estimated at roughly 4–5 percent of the national gross domestic product (GDP) according to press reports. However, if one considers the recent announcement by North Korean authorities of their plans to increase R&D investment to 3 percent of the national GDP, it is assumed that the current level of R&D investment remains below the 3 percent level. Meanwhile, the annual budget allocation for the new Five-Year Plan for Science and Technology Development (2003–2007) is estimated at around 15 to 20 million euros.

Besides the organizational restructuring during this period, there was also a change in leadership. Rhee Kwang-ho, formerly the chairman of the Academy of Sciences, now serves as the ruling party's director of Science and Education, while Byon Yong-rip, formerly the minister of Education, was appointed the new chairman of the Academy of Sciences. Rhee Kwang-ho is especially known for his understanding of the operations of the Academy of Sciences. His ap-

pointment as the ruling party's director of Science and Education is expected to further strengthen the role of the Academy of Sciences in North Korean R&D efforts.

b. Restructuring IT-related Organizations

As more individual research institutes begin to focus on gaining economic benefits through operational efficiency, independent accounting systems have spread among organizations specializing in applied research. This phenomenal trend is most apparent among IT research institutes that specialize in developing computer software. For example, the Korea Computer Center (KCC), a leading North Korean IT organization, increased the number of its branches from seven to ten and introduced independent accounting systems in all ten branches. Because the KCC itself uses an independent accounting system, each branch center is subject to a double-layered independent accounting system.

To support this approach effectively, three vice presidents assist the president by sharing different management roles and responsibilities. The KCC has now been promoted to a government ministerial level and has been renamed the Software Industry Bureau. Han Woo-chul, son of Han Duk-soo (the deceased former chairman of Chochongryun, a pro-North Korean association in Japan, was appointed president of the KCC. Ten branches of the KCC include Onsanduk, Chongbong, Samjiyon, Mankyung, Oeun, Milyoung, Sobaeksoo, Samilpo, and Naenara.

Along with the organization's expansion, there has been a major increase in employees. Table 13-1 shows the growth of KCC employees. The total number grew by almost three times between 1990, when the KCC was established, and 2000. The number of employees who have academic degrees, one of the yardsticks for gauging the quality of an organization, increased by about ten times

Table 13-1. Growth of Employees at the KCC

Year		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total No. of Employees		294	392	429	481	529	546	682	689	695	816	840
Degree Holders and Faculty Members	Professor	1										1
	Ph.D.	1	1	1	1	1	1	1	1	1	4	5
	Assistant Professor	2	2	2	2	3	3	3	3	5	5	5
	B.A.	4	8	10	11	12	17	20	22	30	39	44
Total		5	9	11	12	13	18	21	23	31	44	49

Note: The total number of degree holders and faculty members represents the sum of Ph.D. and B.A. degree holders. Professors and assistant professors are divided according to Ph.D.s and B.A.s.

over that same period. Employees holding bachelor's degrees, equivalent in level to South Korea's master's degrees, grew ten-fold, from four to forty, as a result of continuous recruitment of graduates fresh out of college or graduate schools.

A brochure about the KCC was published in 2003 and claims that the total number of KCC employees is about 2,000, many of whom are graduates of prestigious schools in North Korea, such as the Kim Il-sung University, the Kim Chaek University of Technology, and the Pyongsung College of Science. Their majors cover a wide spectrum of basic and applied sciences including computer science, mathematics, communications, automation, and physics. The KCC Institute of IT, an educational arm under the KCC, is dedicated to educating talented middle school graduates and training them to become IT experts, thereby contributing to the advancement of IT technology.

The KCC plans to further develop its researchers by enrolling them in human resources development projects of international organizations such as UNESCO and UNIDO. Those organizations train engineers in real-world situations by actively pursuing joint R&D, as well as joint ventures with multinational IT companies. Following the directives of Kim Jong-il, North Korea is focused especially on developing programs using the Linux platform.

3. Achievements of National R&D Plans and the Establishment of the New Five-Year Plan

a. Major Achievements of the Five-Year Plan for Science and Technology Development

Commemorating the fiftieth anniversary of the Academy of Sciences in December 2002, North Korea announced the major achievements of the Five-Year Plan for Science and Technology Development that was implemented from 1998 to 2002. The achievements are divided into three areas: rebuilding the national economy through technology, improving public welfare, and developing basic and advanced sciences.

(1) Rebuilding the National Economy through Technology. Historically, North Korea's biggest problem has been in the energy sector, which serves as the basic infrastructure of the national economy. Therefore, key research projects of the Academy of Sciences have been concentrated on energy issues. The biggest achievement so far has been the development and installation of a boiler that can heat 160 tons of hot water at the Pyongyang Thermoelectric Power Plant. Using the know-how accumulated from developing its first high-capacity boiler, the Academy of Sciences is now developing a second high-capacity boiler that

can hold 210 tons of water.

To improve the combustion efficiency of coal, North Korea conducted a five-year research project to develop airflow mills instead of the traditional ball mills. North Korea announced that the new method succeeded in producing 1.8 times more dust coal than the old method. In the hydraulic power plant program, research has focused on improving the efficiency of hydraulic turbines. North Korea announced that an improved turbine installed at the Supung Power Plant generated 17,000 kilowatts more electricity than the traditional turbine.

In the area of machinery, North Korea has focused research on oil pressure engineering and excavators. In railroad engineering, North Korea succeeded in the local development of a special vehicle for railroad welding to replace imported Russian vehicles that cost \$3 million per unit. In metals research, North Korea analyzed the minerals found at the Eunyool Mining Site—which had been considered obsolete—using advanced minerals classifiers. It was reported that a minerals processing site with the capacity of 500,000 tons was set up to handle the analysis. Another important achievement in metals research was the development of new refractory materials that extended the useful life of blast furnaces by 1.2 times.

In chemistry, research has been focused on developing the Oxygen Electric Heating Method and incorporating that method into carbide production at the Soonchon Vinalon Incorporated Company. The results of two pilot tests, each of which produced 80 tons of carbide per day for fifteen days using the new method, proved that the new method was successful in reducing the electricity consumption of the electric furnace from 50,000 kW to 23,000 kW. The experiments are still under way. North Korea also succeeded in the processing of Heimangcho, a useful industrial material, which helped Namhung Youth Chemicals Company produce 10,000 tons of sodium carbonate and ammonium sulfate fertilizer.

(2) *Improving Public Welfare.* North Korea has focused on increasing food production, one of the most critical requirements for improving public welfare. Particular attention has been paid to improving the quality of seeds, which resulted in successfully developing several original seeds. North Korea has also succeeded in developing virus-free potatoes by cultivating potato tissue. It was reported that a potato processing plant has started operation in Daehongdan. As for water utilities, to ease drought and to supply sufficient agricultural water to the regions near the Daedong River, North Korea drained salt water and filled the drained area with 10.003 billion cubic meters of freshwater, thus using it mainly for irrigating 190,000 *chongbo* of rice fields. A small portion of the freshwater was also used to supply some chemical plants.

To ease the shortage of paper, North Korea has developed a new paper manu-

facturing method called the thermal mill paper production process. The advantage of this new process is that paper can be produced without regard for the types of trees used. In addition, North Korea has developed a new species of *Morus* as part of forestation efforts. To protect the environment, North Korea has developed new building materials for urban construction.

(3) *Developing Basic and Advanced Sciences.* In basic and advanced science, North Korea focused on information technology and biotechnology. First, North Korea succeeded in developing a parallel computer linking 32 Pentium III- and IV-level computers. The plan is to develop a parallel computer linking 64 to 128 Pentium-level computers. North Korea has been quite successful in exporting newly developed computer programs overseas. It has conducted research on estimating the volume of a grain harvest by analyzing satellite imagery and data. The estimates from the analysis turned out to be almost as accurate as the statistics from the Ministry of Agriculture. Other specific research projects included estimating plant mulching, estimating the rate of soil utilization, and mapping.

In the field of biology, North Korean research has been concentrated on animal cloning. North Korea has succeeded in cloning six rabbits, becoming the second country in the world, after France, to succeed in animal cloning. Additionally, North Korea laid a foundation for the localization of restriction enzymes production. It earned international renown by publishing a revised edition of the plant dictionary containing detailed information on 5,000 classified spore plants.

North Korea has developed new steel-making technologies and increased production by 60,000 tons. Machine tool companies such as Heechon, Rakwon, and Taecheon are reported to have achieved great success in improving machine tools by cooperating with the Association of Korean-Japanese Scientists and Engineers.

b. Establishment of a New Five-Year Plan for Science and Technology Development

At a ceremony commemorating the fiftieth anniversary of the Academy of Sciences, the past scientific and technological achievements of North Korea were presented along with the key contents of the new Five-Year Plan for Science and Technology Development. Basically, the new plan consists of three parts: seventeen initiatives related to the national economy, five initiatives in advanced technology, and other miscellaneous initiatives. The details of these initiatives are summarized in Tables 13-2, 13-3, and 13-4.

In implementing the new Five-Year Plan, North Korea plans to invest a total of 70–100 million euros over the five-year period, or 15–20 million euros per year. North Korea will gather and distribute documents and information required to implement the plan and will groom high-caliber scientists by training and educating them overseas. Through active cooperation with foreign counterparts, North Korea plans to develop technologies that are in demand.

Table 13-2. New Five-Year Plan for Science and Technology Development

Area			Description
Energy Issues	Power Generation	Thermo-electric Power Plant	- Produce a 210 ton-capacity hot water boiler. - Produce a 320 ton-capacity hot water boiler and reduce oil consumption.
		Hydraulic Power Plant	- Improve turbine efficiency: generate additional 60,000–70,000 kW of electricity by installing a new turbine at Supung Power Plant #7, and roll out to other power plants.
		Power Transmission	- Reduce power loss from the current level of 21 percent to 15 percent. - Introduce high-voltage transmission system (direct current).
	Coal		- Introduce advanced technologies for exploration and digging (improve efficiency to 90 percent). - Improve basic transportation equipment and coal dressing technology.
	Wind-power Generation		- Develop wind power plants as an alternative power source.
	Reduction of Electricity Consumption		- Reduce electricity consumption in the fertilizer, chemicals, and steel industries.
Back-bone Industry	Metal Industry	Steel-Making Without Using Cokes	- Introduce lignite steel-making process to Kim Chaek Steelworks (construct a 60,000 ton pilot furnace). - Produce low-temperature Samhwa steel using oxygen heating method.
		Refractory Materials	- Produce colored metals.
	Machinery Industry		- Machine tools: improve export quality. - Modernize electric machinery and oil pressure equipment.
	Railroad Transportation		- Improve speed by 1.3 times by developing a synchronous four-shaft electric locomotive.

Source: Korean-Japanese Scientists and Engineers Association (2003, 10–11).

Table 13-3. New Five-Year Plan for Science and Technology Development (Improving Public Welfare)

Area	Description
Grains	- Produce 8 million tons of grain by resolving problems related to seeds, fertilizers, and agricultural chemicals.
Meat	- Develop better breeds of livestock. - Develop better breeds of poultry; produce 3.1 million eggs per year. - Develop better breeds of ducks and ostriches.
Vegetables and Fruits	- Develop better strains: produce 400,000 tons of apples and pears.
Vegetable Oil	- Substitute imports, which make up the majority of consumption. - Increase cultivation of beans: 5 tons. - Increase cultivation of grapes. - Plant trees that produce vegetable oil: export pine-nuts and walnuts.
Fish	- Develop additives and protein feed for fish-farming. - Renovate fishing ports.
Forestation	- Plant more forests; forestation is necessary to deal with the shortage of water resources. - Know that saplings are in dire need; plant 1.5 billion trees per year for ten years. - Plant trees in 150,000 <i>chongbo</i> every year through direct cultivation and greenhouse cultivation. - Development of the forest for gardening.

Table 13-4. New Five-Year Plan for Science and Technology Development (Basic/Advanced Technology)

Area	Description
IT	- Localize facilities and products. - Develop new programs. - Develop communications technology.
Bioengineering	- In agriculture, develop strains that can endure cold and dry weather. - In medical science, develop insulin, growth hormones, and vaccines for hepatitis B and C. - In genetic engineering, complete the installation of core facilities, and send students overseas for higher education.
New Energy	
New Materials	
Marine/Aerospace Science	

c. Development of Three-Year Plan to Resolve Fuel and Energy Issues

In addition to the Five-Year Plan for Science and Technology Development,

North Korea in the first half of 2003 announced a separate plan called the Three-Year Plan to Resolve Fuel and Energy Issues (2003–2005). The plan calls for first resolving fuel and energy issues in order to rebuild the national economy through technology. The plan aims to resolve fuel and energy issues during a three-year period and then to help rebuild the national economy and to create new industries using advanced technologies.

The objectives of the plan imply that the Three-Year Plan overlaps the energy issues of the Five-Year Plan for Science and Technology Development to a considerable extent. Therefore, it would not be too erroneous to assume that the success of the Five-Year Plan relies on how successfully the Three-Year Plan for Resolving Fuel and Energy Issues achieves its objectives.

4. International Science and Technology Cooperation

Emphasizing the importance of education and training to develop science and technology, North Korea is now expanding with foreign countries its exchange programs for scientists and engineers. North Korea sends about 300 students every year to China, a long-time ally. In return, it receives about 50 Chinese students. Exchange programs with Russia, which had been suspended for more than ten years since the early 1990s, recently resumed, along with discussions on connecting the railroads of the two countries. North Korea now sends several dozens of students to the relevant schools in Russia as part of the railroad project. North Korea has also gradually resumed its cooperation with former Communist countries in Eastern Europe, mobilizing their human networks and accumulated knowledge and capabilities.

North Korea is now strengthening international cooperation in science and technology as a means of acquiring advanced technologies. A directive by Kim Jong-il called for the active pursuit of international cooperation in advanced technology areas, and commented that self-supported economic development does not necessarily exclude the introduction of foreign advanced technologies. Following this direction, North Korea is now pursuing technological cooperation not only with former Communist countries but also with advanced countries in the West. As a means of achieving this goal, North Korea is collecting relevant technological information by expanding its exchanges with overseas Korean scientists and engineers, particularly Korean-Japanese and Korean-Americans, because Japan and the United States are the largest sources of advanced technologies. In addition, North Korea is expanding exchanges with South Korean research organizations in IT and BT and has even invited them to conduct research in North Korea.

Cooperation with developing countries, which was minimal during the 1990s

because of North Korea's stagnation, has been resumed. North Korea has begun collecting relevant information by dispatching science and technology attachés to several developing countries. North Korea has continued to provide agricultural technology support for some African countries that are its long-time allies.

B. Issues

1. Research Capability

Since shifting the focus of its research to supporting production sites and to self-sustaining economic development in the 1950s, North Korea has neglected research in the field of advanced technologies, as well as basic science. The rapid drop in the capacity use rate of the production facilities—caused by their obsolescence—worsened the situation, negatively affecting the national economy and transferring most of the problems of the economic system back to the R&D system. As a result, North Korean research institutes are now severely lacking in their capability to develop advanced technologies, which could have helped the nation to overcome its economic problems and create new industries. In other words, because North Korean research institutes are not self-sufficient, they suffer from the lack of a sound R&D system that can meet national needs.

Another important issue is the lack of R&D investment. The deteriorating economic and financial situation in North Korea has forced the country to dramatically reduce investment in R&D so it can focus on imminent issues such as fuel and energy. Under such circumstances, some research institutes report a lack of funds for purchasing the necessary research equipment, conducting experiments, and acquiring reference materials. With little potential for profit generation, North Korea research institutes do not seem capable of resolving their current impasse.

2. Fuel and Energy

Currently, fuel and energy issues are bottlenecking the North Korean economy, and there is a widespread sense of urgency in tackling the fuel and energy issues in the science and technology sector. As a result, improving the infrastructure of the national economy and resolving fuel and energy issues have become the top priorities of North Korea's national R&D plan. Accordingly, R&D investments are concentrated in those areas. This concentration is the reason behind North Korea's concurrent implementation of the Three-Year Plan for Resolving Fuel and Energy Issues and the Five-Year Plan for Science and Technology Development.

However, without replacing the obsolete facilities in the infrastructure industries such as power generation, coal, metals, and railroad transportation, it is unrealistic to expect an increase in productivity. For example, unless the North Korean steel industry and thermal power plants convert from coal to more efficient sources of energy, any further increase in productivity appears impossible. The North Korean regime understands the problem, but the replacement of obsolete facilities requires an enormous amount of investment. The substitution of raw materials implies opening the market to a dependence on foreign suppliers. Those facts will make it difficult for the North Korean regime to take swift action. Considering that areas not specifically mentioned in the national R&D plan do not receive any government funding, it is even more unrealistic to expect dramatic improvement in those peripheral areas.

3. IT

North Korea's strategy to pursue automation and to develop its computer industry is significant only in the domestic context. In reality, the North Korean computer industry is not competitive at all by international standards. Regardless of whatever research capabilities the North Korean computer industry might possess, the industry has made no significant advancements beyond the simple assembly of imported components. The North Korean software industry is said to be internationally competitive in a few select products. Nevertheless, it would be difficult for sufficient profits to be generated because the domestic market is relatively small and the North Korean software industry is not responsive enough to international trends. Thus, the country continues to delay the opening of its market to the outside world.

Some locally developed software products that have been applied to various production sites have achieved a considerable increase in productivity with limited investment. However, the dependence on imports for most of the electronic components presents limitations to any further improvements in productivity, barring major capital investment. Moreover, because most application programs used in North Korea are imported, it is almost impossible for North Korea to develop a customized operating system such as Linux on its own.

4. Light Industry and Agriculture

As has been demonstrated with the development of Vinylon, the so-called *juche* textile, North Korea's chemical industry possesses a considerable level of research capability that serves as the backbone of the North Korean light industries. The Hamhung Branch of the Academy of Sciences, a research hub

for the area, has long received special attention from the country's top leaders. As the movement of goods increases and the shortage of raw materials intensifies, North Korea now faces limitations of coal as the main energy source for the national economy. If North Korea can switch to a petrochemical energy source, it may expect to gain competitiveness in some postprocessing.

However, even if the country converts to petrochemicals, the lack of capital will still make it difficult to dramatically ameliorate some of the existing problems with coal unless North Korea achieves an economy of scale in its petrochemical industry. When it comes to producing base materials for petrochemical engineering, South Korea is one of the leading countries, with world-class production facilities and considerable production capacity. If South and North Korea agree to cooperate in this area, North Korea could purchase base materials from South Korea and gear its industry toward specializing in postprocessing.

5. International Cooperation

When a country lacks internal development capabilities and even the human resources to support development, cooperation on science and technology with foreign countries can have a great effect. However, North Korea is having difficulties in acquiring advanced technologies because the country is firmly closed to the outside world. What makes the situation even more difficult is that North Korea's international cooperation efforts are focused on former Communist-bloc nations. As a result, technology support from Korean-Japanese scientists and engineers has diminished. In addition, during the 1990s, the number of international academic journals circulated in North Korea decreased significantly. Because current cooperation with China and Russia is focused on developing human resources, it will take quite some time to be able to observe the effect of those measures on North Korean productivity.

In this context, science and technology cooperation between the South and the North has great significance in that it could help resolve North Korea's imminent issues while enhancing the self-sufficiency of the science and technology communities of the two Koreas. The recent increase in bilateral cooperation in IT and BT between South and North can be understood in that vein. However, because of the North Korean nuclear bomb issues, cooperation in areas sensitive to national security shows no progress.

C. Future Outlook

1. Acceleration of the Restructuring of the Science and Technology System

Because the science and technology systems of socialist countries, including North Korea, are very closely related to their economic systems, reform in one sector is likely to have a great effect on the other. This effect explains why China reformed its education system as well as its science and technology system so it could make them more suitable to a market economy. The shift began soon after China started its economic reform. Following China's example, North Korea has taken various measures to ensure that the science and technology sectors keep pace with and, in some cases, lead the economic reform. It is generally expected that when the nuclear bomb issues are resolved, North Korea's reform and the opening of its market will be further accelerated.

Reforms in science and technology may include the following measures: (a) restructuring the national R&D system to focus on strategic areas; (b) establishing research institutes specializing in select high-tech areas; (c) opening research institutes in the private sector; (d) strengthening joint research efforts between industry, academia, and research institutes; (e) implementing more profit-generating projects; (f) rolling out an independent accounting system; (g) activating technology transactions; (h) ensuring the flexible mobilization of researchers; (i) introducing project performance accountability systems; (j) strengthening economic incentives for excellent performers; and (k) expanding external cooperation by research institutes.

2. Strong Focus on Economic Support

As the North Korean regime concentrates on economic development, its science and technology community is expected to support the country's policy. The regime's policy priority will entail rebuilding the national economy through technological development, improving public welfare, and pushing the development of basic and advanced technologies. In the IT area, North Korea not only will pursue the automation of production facilities but also will pay attention to improving operational efficiency and scientific management.

3. Focus on Areas with Comparative Advantages

After North Korea resolves its fuel and energy issues and secures extra capital for investment, it is likely that the North will try to create momentum for

economic growth by focusing on areas where it can gain a comparative advantage. Areas that have potential for competitiveness include IT (focusing on software), chemical engineering, and machinery automation. Processing industries are also expected to grow as a benefit of the cheap labor force. In response, research institutes are expected to strengthen their capabilities to conduct contract-based projects commissioned by those industries.

4. Strengthening International Cooperation and Inter-Korean Cooperation

The reality is that it is almost impossible for North Korea to rebuild its production facilities or to develop advanced technologies without technology transfers from overseas or massive foreign investment. Although North Korea wants to realize its vision of reform, the country does not have sufficient human resources or relevant contact with other countries to support such a change. Therefore, it is imperative that North Korea further stimulate international cooperation in science and technology. Inter-Korean cooperation can be pursued in select areas as a part of a broader framework of international cooperation.

References

- Korean-Japanese Scientists and Engineers Association. 2003. *Science and Technology*. Vol. 1. Tokyo: Korean-Japanese Scientists and Engineers Association.
- Lee Choong-eun. 2001. *Study on North Korea's Development Trend of Advanced Technologies (IT and BT)*. Seoul: Ministry of Science and Technology.
- _____. 2002. *Issues and Strategies of South-North Science and Technology Cooperation*. Seoul: Science and Technology Policy Institute.
- Lee Choong-eun and Bae Young-ja. 2002. *Promoting South-North Science and Technology Cooperation Mobilizing Korean Ethnic Scientists and Engineers in North East Asia*. Seoul: Science and Technology Policy Institute.
- Lee Choong-eun and Kim Kye-soo. 2001. *North Korean National R&D System and S&T Human Resources Development System*. Seoul: Science and Technology Policy Institute.
- Ministry of Science and Technology. 2000. *South-North Science and Technology Cooperation; Current Status and Future Plans*. Seoul: Ministry of Science and Technology.
- Science and Technology Policy Institute. *Science and Technology Policy*. Special Editions on North Korean Science and Technology. Seoul: Science

and Technology Policy Institute, 2002 (3/4) and 2003 (5/6).

Woo Young-ja. 2000. *Study on DPRK's Economic Relations with Foreign Countries*. Pyongyang: Science Encyclopedia Publications.



Part V

The Recent Economic Policy Changes

Chapter 14

The Contents and Background for the Recent Policy Changes

Recent policy changes in economic management, effective beginning 1 July 2002, are completely new to the North Korean government. In fact, those policy changes are considered by North Koreans as being “the biggest reform measures taken by the government since the land reform of 1946.”¹ Such reform measures under a socialist regime will have tremendous effects, not only on the lives of its citizens by affecting their consumption habits, increasing their awareness of economic activities, and educating them on an enterprise’s activities as well as its role in developing the national economy, but also in serving as an important milestone in deciding the direction of future changes for North Korea’s economic system.

There are conflicting views and speculations concerning North Korea’s decision to undergo economic reform on 1 July 2002. In fact, the economy of North Korea has become a great source of debate in South Korea and international economic circles, as well as among the common population.

First, there is controversy as to whether the reform measures have enough substance to bring fundamental changes to North Korea’s rigid economic system. Some people believe that the changes occurring in North Korea are substantial enough to signify the beginning of reform toward a market-oriented economy. Others view the reform measures not as a replacement for the previous system but merely as a means for North Korea to strengthen its existing socialist economic system.

¹ *Choson Sinbo* (20 July 2002).

Second, there is some question as to whether the July 1 Economic Reform possesses enough driving power to bring positive results to the country's current economic condition. North Korea's decision to introduce the incentive policy, which is expected to increase economic output and productivity, has injected some optimism into speculations on whether the reform measures will succeed. However, some feel that the changes are not fundamental enough to create an investment-friendly environment that can successfully attract the infusion of foreign trade and direct investments that are desperately needed to revitalize North Korea's economy.

It has been about two years since the economic management policy reforms were announced. At this point, there is a need to review and assess the contents and motive force behind the initiation of the reform and to explore the various speculations concerning the possible consequences of such a reform. This chapter has tried to maintain objectivity in analyzing the specific contents of and circumstances underlying the recent economic policy changes. We will begin by examining the major economic policy changes in North Korea after the July 1 Reform, followed by the underlying causes that ignited the reform.

The data and research materials referenced in writing this chapter were compiled from various sources, including North Korea's domestic reports, written records gathered from meetings with North Korean officials, prominent North Korean publications such as *Rodong Shinmun* (Workers Newspaper) and *Minju Choson* (Democratic Korea), *Choson Sinbo* (the Japan-based pro-North Korean newspaper) and the principal foreign press that North Korea deals with.

A. The Main Contents of Recent Economic Policy Changes

1. The Introduction of a New Price Concept and a Realistic Adjustment of the Existing Price System

One of the most important reforms initiated on 1 July 2002 was the introduction of a new concept of price and the adjustment of the price system to a realistic level. Using the new concept of the role of price, North Korea executed the drastic change of increasing the price of all commodities by an average of twenty-five times. This huge adjustment in the price system was prepared and executed according to the Cabinet's decision on 11 May 2002, known as Decision on the Revision of Price and Living Expenses. The logic and fundamental principles behind the new price system contradicted the concepts used in the past. The previous price system used by the North Korean Price Bureau, which drew on socialist principles, can be roughly divided into two parts. The first part involves the notion that setting the price of a certain commodity should be based solely

on the amount of labor that went into its production. The second part involves the idea of consciously separating the price of a commodity from its value. The first price-setting principle uses as its logical foundation Marx's "The Value of Labor," which served as the basis for establishing price systems in many socialist countries in the past. The second basic price-setting principle is based on the idea of consciously lowering the price of general consumer goods from its value with respect to the citizens' income level and stability. Certain consumer goods with limited availability would be priced higher than their value in order to lower demand.²

The principles behind the new price adjustment system are an almost complete departure from the previous system. In fact, according to explanations provided by the North Korean government, the newly adjusted price of rice was established without taking into account the principle of "separating the price from its value," one of the most fundamental principles in the previous system, but by taking into account three elements: the initial cost of production, the going rate in the international market, and the domestic supply/demand condition.³

In announcing the price adjustment measures, the North Korean government acknowledged that "the price should be determined based on the initial cost of its production and the law of supply and demand" and admitted its mistake in factoring only state-planned costs.⁴

Since the reform, the Price Bureau of North Korea has highly emphasized the importance of setting the price of a product according to its real value, which is based on the "law of supply and demand."⁵ From this emphasis, one can assume that the old custom of "setting the price of general consuming goods lower than its real value," according to people's income levels and to ensure stability, has been abolished. Nevertheless, unreasonable pricing, usually done in the name of economic stabilization, still exists to a very limited degree on certain products.

It seems that by initiating new economic measures, the North Korean gov-

² North Korea Social Science Publishing Company (1985, 42).

³ *Choson Sinbo* (26 July 2002).

⁴ *Ibid.*

⁵ It has been accepted that the State Price Establishing Committee is a separate organization controlled by the State Planning Committee. The organizations that supervise North Korea's price system and its application process are the State Planning Committee, the Financial Department, and the Price Establishing Committee (Kim Il-sung 1972, 465). It has been reported that the Price Establishing Committee was later changed to the State Price Establishing Committee. Along with announcing the economic management measures, North Korea also provided lectures and ideological study sessions for its citizens throughout the nation. It has been reported that the need for reform measures was publicized in those sessions.

ernment is acknowledging the fact that its economic difficulties are caused by an unrealistic price system. This sentiment is clearly represented in the domestic report that was unofficially distributed to citizens.⁶

In that domestic report, the North Korean government defined the concept of price by acknowledging and explaining several facts. First, “the rising and falling of price, according to its demand, is one of the basic laws of economy.” Second, “in recent years, we failed at achieving an effective price system to function successfully in the socialistic economic structures and produced serious damages in the state’s economy.” Third, “changes in international conditions, such as the collapse of [the] socialist market, presented a great obstacle in providing and delivering the necessary funds for the state’s economic trade and forced the state to apply a ‘new price-setting system’ to its economy.”⁷

The North Korean government’s primary goal in initiating such an unprecedented price adjustment is to diminish the state’s fiscal burden and to minimize damage to the state caused by the free market. For example, the government’s purchase price of rice was increased by 50 times, whereas the selling price was increased by 550 times. Regarding this issue, the North Korean government claims that although in the past prices were set with consideration for consumers, effective 1 July 2002, prices were set with greater consideration for producers. The reason was that the production of goods was not normalized owing to economic difficulties. This situation led to dual prices and discrepancies between the government-set prices and living expenses.⁸

With the realization that the state-owned enterprises are experiencing economic difficulties because of these dual prices, the North Korean government is now focusing on minimizing damages by adjusting government-set prices to a realistic level. North Korea points out two facts regarding this issue.⁹

First is the seriousness of the growing inequality between state-owned markets and the free farmers’ markets. In other words, because the current prices in state-owned markets are much cheaper than the prices set in the farmers’ markets, transactions and trade in state-owned markets are flourishing. The inequality causes an imbalance between the individuals who have more than enough commodities and the state, which experiences a great shortage of goods. In actuality, no commodities are available in the state-run commercial markets, whereas the farmers’ markets have almost every available product, from consumer goods to

⁶ “Higher and Faster in the Field of Economic Growth, Vol. 4: Brave and Forward Reform Measure, *Choson Sinbo* (26 July 2002).

⁷ *Ibid.*

⁸ “Price Adjustment for Manufacturers,” *Choson Sinbo* (2 August 2002).

⁹ Internal explanatory guideline for the July 1 economic management reform (July 2002, 2).

industrial goods. Even automobile parts and valuable, state-owned, raw materials are traded at the farmers' markets.

Second, difficulties currently faced by the state-owned markets arise as a result of exploitation by the farmers' markets. The reason that farmers' markets are flourishing is they are taking advantage of the low prices in the state-owned markets to buy supplies from the government and then to sell them at much higher prices. In other words, although all manufacturing is done by the state, most commodities and money end up in individuals' possession. The state-run markets have become a means for individuals to empty the state's purse. According to the explanation provided by the North Korean government, although the state does not have any money, certain individuals have more than two years' worth of the state's budget in their possession.

This situation suggests the idea that the reform of greatly increasing prices was initiated not only to dissolve the state's fiscal burden but also to absorb unofficial business dealings into the sphere of official economic activities. Simply put, the purpose of the price reform was to reduce the rate of unofficial transactions and to encourage the increase of official ones by setting the prices in the state-owned markets to be close to the prices in farmers' markets. (See Table 14-1 for comparison of prices before and after the July 1 Reform.)

The seriousness with which the North Korean government is approaching the issue of damages caused by the unrealistic price-setting of commodities can be seen in several cases. For example, the internal explanatory report for the economic management reform measures states that "Right now, individual merchants are achieving exorbitant profits by buying up pork at 60 to 80 won per kilogram and selling [it] at a much higher price in the farmers' markets. However, these pork merchants will eventually disappear because from now on, the state's purchasing price will be much higher."¹⁰

North Korea insists that new methods of pricing will be enforced in accordance with the newly developed price-setting principle. First, prices will be set according to domestic supply and demand conditions. Those prices will be fixed for individual consumers, sellers, and enterprises, and price discrepancies will fall to below 5 to 10 percent.¹¹ The internal explanatory guideline in the July 1 Economic Reform also mentions this price-setting principle.¹² North Korea's

¹⁰ *Ibid.*

¹¹ From a lecture given by Kim Yong-sul, North Korea's trading industry official, to Japanese economy officials on 20 October 2002.

¹² The internal explanatory report of the economic management reform measures states, "In the future, prices won't be fixed, but will be adjusted flexibly according to supply and demand conditions to ensure smooth cash flow."

Table 14-1. Price Increase after the July 1 Economic Reform

Item	Before the Increase	After the Increase	Margin of Increase (x times)
Rice	(purchasing price) 80 jun/kg	(p.p.) 40 won/kg	50
	(selling price) 8 jun/kg	(s.p.) 44 won/kg	550
Corn	(p.p.) 49 jun/kg	(p.p.) 20 won/kg	41
	(s.p.) 6 jun/kg	(s.p.) 24 won/kg	400
Beans		(p.p.) 40 won/kg	
Pork	(p.p.) 7 won/kg	(p.p.) 170 won/kg	24
Chicken		(p.p.) 180 won/kg	
Pyongyang—Chung Jin Train Fare	16 won	590 won	37
Bus and Subway Fares	10 jun	2 won	20
Streetcar Fare	10 jun	1 won	10
Coal	34 won/ton	1,500 won/ton	44
Electricity	35 won/1,000 kW	2,100 won/1,000 kW	60
Electric Light, Steel Plate, Pure Rubber			45
Gas	923 won/ton	64,600 won/ton	70
Men's Sneakers	18 won/pair	180 won/pair	10
Facial Soap	3 won/unit	20 won/unit	6.7
Laundry Soap	50 jun/unit	15 won	30
Soybean Paste	n.a.	17 won/kg	
Soy Sauce	n.a.	16 won/kg	
Soybean Oil	n.a.	180 won/kg	
Flavor Enhancer	n.a.	300 won/kg	
Hard Liquor	n.a.	43 won/L	
Herring	n.a.	100 won/kg	
House Rent	n.a.	78 won/60 sq. m.	
Heat	n.a.	175 won/60 sq. m.	
Sondowon Beach Entrance Fee	3 won	50 won	17
Monthly Magazines, Choson Literature	1.2 won	35 won	29

Source: Chung Yun-ho (2003), based on the internal guideline for July 1 economic management reform measures.

price management will be moving in the direction of a partial market price system to reflect the relationship between supply and demand. In other words, the central government will still control the prices but will manage them flexibly according to the supply and demand condition of its economy. This change sig-

nifies the country's abandonment of its rigid and state-controlled price system of the past. Realistically, North Korea will have to flexibly manage its price system according to the supply and demand conditions of the farmers' markets if the state wants to reduce the amount of items that are circulated in the unofficial markets. The only thing that the North Korean government should resolve is to increase the production and supply of commodities so that the rate of price discrepancy can be restricted within the range of 5 to 10 percent.

Second, the price of food has become the standard in deciding the price of other goods. Until now, the price of principal industrial goods, such as coal and electricity, functioned as the standard in setting the price for other goods. This formal price-setting system reflected North Korea's drive for industrialization by encouraging the development of heavy industries. North Korea's industrial structures are also built using this policy.¹³

The following explanation was provided in North Korea's domestic report regarding the reasons for designating the price of food as the standard for price-setting, and its validity: "There is nothing more important than food in people's material lives. A person simply cannot tolerate or negotiate with hunger, above all else. For that reason, it is justifiable to have the price of food as a basis for establishing the price of all other goods."¹⁴ However, basing its price system on agricultural goods and not on industrial goods does not mean that the economy of North Korea will be more agricultural based than industrial based. It is more likely that such changes were implemented as a temporary solution to ensure the delivery of food to its citizens because of the current food shortage.

2. The Drastic Adjustment of Wages and the Introduction of the Incentive System

A workers' wage increase policy was included in the July 1 Reform, along with the price increase. According to the reported data, the workers' wages were increased, on average, by 18 times.¹⁵

According to calculations by the North Korean government, the minimum amount of money needed for a family of four to maintain its basic livelihood—under the new price reform—is 4,000 won per month. According to this calculation, assuming that two family members are working, the monthly salary

¹³ Kang Il-chun (2002, 76).

¹⁴ Internal explanatory data from the economic management reform measure (July 2002, 3).

¹⁵ *Ibid.*, 7.

of a single person should be at least 2,000 won.¹⁶

Under the principle that workers who contribute more to the group and society should get special treatment, there was a greater increase in the wages of field workers, highly trained technicians, and scientists than in the wages of regular office workers.¹⁷ For example, the average increase in wages was higher for coal miners and national power industry workers, approximately 20 to 25 times. The wages for certain specialists, such as field workers, researchers in the special technology fields, planners, and college professors were increased by approximately 19 times.¹⁸ However, for workers and supervisors who are not in the manufacturing areas of the industry, wages increased by only 17 times. The farmer's average wage per month is about 2,300 won and is set higher than the wage of regular laborers and office workers.

The wages for soldiers were increased, on average, by 18 times, even though slight differences can be detected according to their period of service. The newly prescribed monthly salaries for soldiers are as follows: second lieutenant, 2,970 won; first lieutenant, 3,240 won; high lieutenant, 3,510 won; captain, 3,780 won; major, 4,130 won; lieutenant-colonel, 4,610 won; first colonel, 5,270 won; colonel 5,380 won; and major-general, 6,670 won.¹⁹ The fact that the increased rate of wages for particular workers, such as the collective industrial workers, science and technology workers, and farmers, are much higher than that of workers in other fields is a reflection of the new discriminating wage policy in North Korea.

However, the aforementioned new wage standards function literally as standards and do not guarantee that the general increased rates will be reflected in the actual payments. In fact, individuals can earn more or less than the standardized wage, depending on the amount and quality of their work, their personal contributions, and the accomplishments of the group that they are a part of. The main purpose of the new wage system is to ensure an increase in productivity. For that reason, North Korea still favors egalitarianism in its rationing system. Until recently, egalitarianism in North Korea was highly abused. For example, even if one manufacturing company missed its production goals by a large amount, 60 percent of the workers' wages were provided by the state's supporting funds. And in instances where actual production was more than the goals, incentives were calculated, not according to personal contributions, but according to group

¹⁶ Kang Il-chun (2002, 77).

¹⁷ Internal explanatory data from the economic management reform measure, (July 2002, 7).

¹⁸ *Ibid.*, 7.

¹⁹ *Ibid.*, 9.

effort. In the case of cooperative farm workers, the method of “evaluation according to the amount of days worked” was applied, which means that regardless of the quality of work, the year’s supply of food was distributed equally to everyone who worked for a certain number of days.²⁰ As a result, skills and labor efficiency were not reflected in wages.²¹ However, the new method of awarding more rations to harder workers and distributing fewer rations to inefficient workers will come into effect with the economic management reform measures.²²

Following the economic reform, the method of evaluation will also become more quantitative. The North Korean government has introduced the principle of contract payment in order to quantify the amount of work that a worker produces. Contract payment, a principle that is the total opposite of fixed wages, refers to the act of assigning individual workers a fixed quantity of work and paying wages according to their accomplishments. Contract payments can be divided into daily contract payments, progressive contract payments, quality contract payments, skill index contract payments, and indirect contract payments, according to the different methods used in evaluating the quality of the labor and the extent of the progress made in reaching a fixed goal. Contract payments can also be classified by individual contract payments and initial contract payments.²³ The principle of contract payments has previously existed in North Korea, but it was never properly introduced into North Korea’s economy system, and there was a problem in its effective application. Currently, many methods of contract payments are being applied, not only in industry, but also in agriculture.²⁴

In addition, to stimulate productivity in the scientific field, North Korea has decided to offer cash incentives for people and institutes that contribute to the development of scientific technology, such as researchers, laboratory personnel, and managing institutes in the amount of the profits made in three years by the new development.²⁵

²⁰ The “evaluation based on the days one worked” refers to the wage system in which the state calculates the days worked into hours on the basis of the ranks given within the profession.

²¹ From the lecture given by Kim Yong-sul, North Korea’s economic official, in front of Japanese economists (October 2002).

²² “The Creation and Reform for the Economic Revival,” *Choson Sinbo* (26 July 2002).

²³ North Korea Social Science Publishing Company (1985, 430–31).

²⁴ It has been reported that in his meeting with UN Official Ausima Genjo, Kim Chang-sik, the minister of agriculture, said that the rations of cooperative farms would be distributed according to production output.

²⁵ Internal explanatory guideline for July’s economic management reform measures, p. 8.

With the introduction of a new wage system, North Korea will depart from its customary practice of equal rationing. Using the new wage system, North Korea will become overly enthusiastic toward the idea of receiving allotments according to one's result, typical of a socialist society.

Ideologically, this concept signifies a shift toward more emphasis on materialistic rather than ideological stimulation. Even though the thirty-sixth amendment to North Korea's Socialist Constitution states that "the state must firmly adhere to the principle of effectively combining political command, economic and technological guidance, state's united guidance, individual units' growth, exclusive command, democratic socialism, political/moral stimulation, and materialistic stimulation, in its administration and management," in actual administration, greater importance was placed on ideological stimulation. However, extreme material deficiencies during the period of the Arduous March resulted in exhausting the usefulness of ideological stimulation.²⁶

The purpose of the recently announced wage increase measure is to propagandize productive work habits by introducing an incentive system and increasing the worker's buying power through adjusted prices.

3. The Reduction of Government Subsidy and the Social Security Services

Important policy changes in North Korea's economic reform were included to eliminate the widespread societal notion that government property was for anyone to take as one pleased. The depth to which this notion is spread within North Korean society signifies how inefficiently the society is operating and is one of the principle causes of its economic difficulty.

Kim Jong-il, the head of North Korea's Ministry of National Defense, expressed his strong objections to these conditions. In his instructional speech on 3 October 2001, Kim Jong-il stated

There are too many give-aways in our society and more unproductive expenditures than productive ones in the use of the state's budget. About 74 percent of the unproductive expenditures were caused by give-aways. The state spends millions of wons annually in providing its citizens with food supplies. Even though the active members of the special troop earn merely about 40 percent of their total living expenses, the other 60 percent of their living expenses is guaranteed by the state, along with bonus daily

²⁶ Chung Yun-ho (2003, 12).

food, travel expenses, and migratory labor fees. The money needed for this alone is more than a hundred and some million won. Even the family members of the trail-worker are issued free boarding passes. Moreover, more money was spent for free refreshments, bonuses, viewing fees, and other free services. As a result, the socialist rationing policies of the past malfunctioned, the society experienced an extreme form of egalitarianism, and it became the norm for people to unlawfully take government property. This [situation] created indolence among the citizens, and [it] decreased efficiency and productivity. Furthermore, [it] resulted in a deficit in the state budget, leading to more economic difficulties. Even the applications of certain social policies, which could have illustrated the superiority of the socialist system if applied well, were not successfully realized. In previous years, food expenses had occupied only 3.5 percent of the actual living expenses. A worker does not have to work hard because, even for a day's work, he can earn enough to buy a month's worth of food. This is the reason many capable housewives chose not to work and why some workers are not enthusiastic about their productions. During the last few years, when the state was unable to supply food efficiently, people began to abandon their jobs and began searching for ways to acquire personal gains.

It has been reported that, to correct those problems, the North Korean government decided to drastically reduce the state-supported fund policies. As a result, food expenses will take up about 50 percent of total living expenses. In the past, a worker had to pay only one ration ticket and a small payment for side dishes while on a business trip. However, now, all business travelers, regardless of their destination, must pay for their own food.²⁷

The changes, such as the discontinuation of the state subsidy and the dramatic increase in the prices of goods and in wages, meant that workers had to start adjusting to a new environment—one in which one needed to pay close attention to one's earnings because one was providing essential items for oneself. When the state was providing food, typical workers had no idea of how much money they needed to live their life. However, from now on, they are in the position of having to actively increase their earnings to buy their own bread and butter.

The North Korean government, even after the announcement of reform measures, emphasized that “our belief that the state must provide for its citizens

²⁷ Internal explanatory report of the economic management reform measures (July 2002, 8–9).

has not changed.”²⁸ As evidence, the North Korean government will continue to provide for its citizens through more than thirty socialist policies, including a free compulsory education system, a free treatment policy, a social security program, and an honorary soldier protection policy.²⁹

The North Korean government rationalized its reduction of the scope of social security by stating, “The adjustment of the scope of application of social benefits was initiated to encourage socialist rationing policies to function more effectively.”³⁰

The North Korean government also stated that after a certain period of time, the practice of the government’s providing food supplies and rations will eventually be abandoned altogether.³¹ In the meantime, the state will dramatically reduce the amount of available items and will attempt to move toward a free market system. Special rationing centers for privileged groups were, in most cases, abolished. It has been reported that the North Korean government is thinking of allowing people to buy additional food according to their individual buying power.³² Thus, it is anticipated that greater inequality will spread in people’s living conditions.

4. The Revision of a Planning System and the Reform of the Enterprise Management Policies

One of the big changes announced in the enterprise management reform measures is the increase in self-control by enterprises. Until now, the economy of North Korea was one of the classic examples of a planned economy in which every aspect and activity functioned under the rigid orders from the central economic authority. The most important role in managing the economy was played by the planning system and was guided by the principles known as “unified planning” (*ilwonhwa*) and “detailed planning” (*saebunhwa*). The unified planning system is almost a completely order-based system in which all existing subjects within the economy, from the most central organization to the lowest-ranking laborer, follow the unified command of the central government. The detailed planning system refers to a micro-management system in which even the most trivial production activities within the enterprise reflect and follow previously set plans.

²⁸ *Ibid.*, 10.

²⁹ “The Creation and Reform for the Economic Revival,” *Choson Sinbo* (26 July 2002).

³⁰ *Ibid.*

³¹ *Yonhap News* (18 August 2002).

³² “The Creation and Reform for the Economic Revival,” *Choson Sinbo* (26 July 2002).

In the past, enterprises could not be involved in any production activities and volunteer activities without the state's authorization. The enterprises could not independently change their manufactured items or production goals or the amount of production. However, the economic management reform measures are bringing major changes to the planning systems.

First, the new measures have reduced the control of the central government and increased the independence of the regional governments, factories, enterprises, and farms in establishing and executing the production plans. In his instructional speech on 3 October 2001, Kim Jong-il emphasized the importance of efficiently distributing the responsibilities of setting the production plan between the central government and regional governments. The central economic authority would design the production plans of the important industrial sectors, leaving detailed plans to be decided by the appropriate subeconomic units, thereby abandoning the "phenomenon of a higher organization feeding the lower."³³ Because of the reform measures, local-level enterprises are now able to set production goals and profit goals independently, and the possibility of managing the businesses to the workers' benefit has increased.³⁴

This change signifies a great weakening of the unified planning (*ilwonhwa*) system, which has been North Korea's central source of power. In the past, the central planning system was regarded as the law of the state and orders of the Party, lessons everybody should follow. However, this planning system is going through a major change.³⁵

The policy changes have been accompanied by ideological transformations. Over the years, North Korea had insisted that the revolutionary principles of unified planning and detailed planning were entirely developed by North Korea's previous leader, Kim Il-sung, who incorporated the *juche* principle and applied it to the economy.³⁶ However, in his instructional speech on 3 October 2001, Kim Jong-il stated that the government should set only the general principles and broad guidelines for the price and standard of the district industrial production goods. It should allow factories to independently determine the actual prices and standards for manufacturing and selling their products under the supervision of the higher planning committee. He also stressed that those changes do not necessarily go against the principle behind the unified planning system but said that they will result in an increase in the supply of items based on demand, and that one commodity could be manufactured and sold with different standards

³³ "Farmers, Production's Owners," *Choson Sinbo* (2 August 2002).

³⁴ *Ibid.*

³⁵ Kim Il-sung (1983, 35–36).

³⁶ North Korea Social Science Publishing Company (1985, 334–35).

and appearances. In comparing the statements of Kim Jong-il with those of Kim Il-sung, one can sense a great difference in the applications of the detailed and unified planning systems. Under the direction of Kim Jong-il, the detailed and unified planning principle will be applied only in its most general sense.

Second, new reform measures are expected to introduce aspects of a market economy to replace the planned economic management system. In his instructional speech on 3 October 2001, Kim Jong-il mentioned the need to establish and operate the socialistic markets, along with carrying on the business of supplying materials. Thus, the North Korean government began to allow the trade of certain deficient items, such as certain raw materials and accessories, between the factories and corporations through the trade markets. North Korea also allowed the factories to use some of their own manufactured products as a means to acquire necessary resources and raw materials. Of course, those changes do not signify the introduction of a capitalist market system to the economy of North Korea. Nevertheless, they are of great significance in that they expanded the enterprises' management rights.

However, even though Kim Jong-il authorized the socialistic trade markets, he continued to emphasize the need for the planning committees to control and restrict the items and quantities in transactions between corporations. He also stressed that all accounts of those transactions must be settled with the banks, signifying that the trade markets are under the complete control of the state and are highly restricted in many aspects.³⁷

The reason for North Korea's decision to scale back its centralized and planned economic system and to initiate decentralization is the serious confusion of its economy. In the past, the State Planning Committee set the production goals for the district, factories, and corporations, practically forcing the enterprises to establish unrealistic production plans.³⁸ This pressure resulted in North Korea's continuing economic and social chaos and was what proved to be the great obstacle in the development of its economy. However, under the reformed policies, the state will be able to prevent some of this economic confusion by establishing realistic production goals and by efficiently managing and controlling attainment of those goals through the efficient division of the decision-making roles between the state and enterprise.

Third, another important change initiated by the reform was the granting to individual enterprises of more duty and self-control in their management. Until recently, in evaluating the actual management conditions of an enterprise, the

³⁷ Chung Yun-ho (2003, 16).

³⁸ Korean Development Research Institute (2002, 45).

North Korean government used commodity indicators and currency indicators to determine the extent of attaining established goals.³⁹ In other words, the evaluation of an enterprise was entirely based on its ability to reach the planned quantity of manufactured goods with a certain amount of funds, as indicated by the commodity and currency indicators. This evaluation method was used primarily to increase production outputs. However, in the July reform, this evaluation method was abandoned, and a new evaluation method “based on pure earned income” was introduced.⁴⁰

The idea of “earned income” refers to the pure profits earned by the company after sales costs, excluding labor costs, are deducted from aggregate sales earnings. Simply put, the concept of a net national income ($V + M$), which is the sum remaining after subtracting C from $C + V + M$ (gross national income), is applied in the new enterprise management evaluation method. The reason that this indicator is attracting much interest is because not only will it allow enterprises to break away from the past practices of earning high evaluations if they reach their production goals (regardless of whether they produce actual sales), but also it is based on the goods. In other words, the previous standard of evaluation considered an enterprise to have fulfilled its duty if it had successfully reached planned production goals, even if it failed to make any sales at all. Under the new standard, a corporation will be evaluated as poor if it produced low sales, even if it met its production goals. This new evaluation system will increase enterprises’ cash turn-over rates and encourage workers’ creativity and originality in producing commodities for which demand is high.

There have been other economic policies that attached importance to money-oriented and quality-oriented ideas of determining the initial cost and profitability. However, there has never before been a system in North Korea that set the concept of profitability as the absolute and complete standard for evaluations, as in this reform. In the past, the general sentiment was that any ideas even slightly out of focus with the principles of the Daeam Work System⁴¹ principle were regarded as revisionist. However, North Korea has now become more open and receptive to effective ideas.⁴²

To increase their “earned income,” North Korean enterprises will have to work hard to cut down expenses, increase productivity, and pay attention to marketing. The fact that the concept of “the earned income indicator,” which

³⁹ The commodities indicator refers to the usage value rate, such as tons, meters, units, etc. (North Korea Social Science Publishing Company 1985, 577).

⁴⁰ North Korea Social Science Publishing Company (1995, 538).

⁴¹ North Korea’s theory on industrial management system.

⁴² Kang Il-chun (2002, 78).

was previously applied only to state-owned and cooperative plantations, will now be applied to all enterprises signifies that a self-supporting accounting system will be strictly enforced.

The reform will now allow enterprises to use their surplus as well as what they were once submitting to the state as reinvestment resources.⁴³ Some people also insist that the North Korean government froze all debts for enterprises and adjusted their records of losses and gains to zeros as a gesture to let people know that they are starting anew under a new standard.⁴⁴ With these new reform measures, the enterprises can concentrate solely on effectively managing their companies without the burden of debts. However, the change means that their responsibilities have increased as well. Enterprises or workers who fulfill their production goals by earning much profit will be rewarded accordingly, while penalties will be imposed on those that fail to reach production goals set by the state's goods indicator plans.⁴⁵ In addition, as part of the reform, North Korea took several new administrative steps to enhance the image and role of managers.⁴⁶ Those steps signify the weakening of the power of the collective leadership in the People's Committee.

5. A Partial Economic Openness through the Establishment of the Special Economic Zone

The July 1 Economic Reform illustrated North Korea's intent to embrace and implement reasonable and practical policies. Following the announcement of reform measures in July, the North Korean government announced the establishment of the *Sinuiju* Special Administrative District in September 2002. That November, North Korea passed the "Kumgangsan tourism district legislation" and "Kaesong industrial complex legislation." If the economic management reform measures were initiated to promote efficiency within the domestic economy, then the liberalization of the Sinuiju, Mt. Kumgang, and Kaesong regions and the establishment of open-door policies are being initiated as an outward-driven strategy to supply the funds needed in North Korea from the outside world to rebuild North Korea's collapsing economy.

⁴³ Department of Reunification (2002, 44).

⁴⁴ From an interview with a Japanese-Korean scholar during his two-month visit to North Korea after the economic management reform measures.

⁴⁵ Kang Il-chun (2002, 79).

⁴⁶ In the past, there was a tendency to respect party leaders' political guidance. Now, a manager's economic decision is being regarded with importance. Those tendencies can be seen from the TV drama called "Our Manager" by *North Korean Central Broadcasting*, which aired in 2002.

The establishment of the Sinuiju Special Administrative District and its special administrative laws attracted the world's attention because of its unprecedented scale compared with the developments seen in the Rajin and Sonbong districts in the past. The Sinuiju district has independent legislative, judicial, and administrative powers, and its regulations even allow foreigners who possess residency authorization for the special administrative district to become legislative members.

In the processes of establishing the Mt. Kumgang and Kaesong industrial complexes and their legislative policies, North Korea showed great earnestness by being receptive to most of South Korea's demands. North Korea granted South Korea easy land-route access and set the minimum labor wages in the \$56.40 range, creating a hospitable environment for South Korean companies.

The fact that North Korea is introducing such an unprecedented scale of special administrative districts and economic zones illustrates the firm resolve of North Korea to attract direct foreign investments.

Both South Korea and China are geographically very close to North Korea, and those two countries provide the most profitable motivation for North Korea's open-door policy. With this motivation in mind, one can sense that the SEZ in *Sinuiju* was established to target mostly Chinese investments, whereas the economic and tourist zones of the Mt. Kumgang and Kaesong region were created to target South Korea. North Korea's open-door policy, realized when establishing SEZs, still has a lot more room for improvement. Nevertheless, North Korea's goal to recover from its economic difficulties through an open-door policy is evident. However, for the success of the open-door policies, the North Korean government should first show a willingness to peacefully resolve some of the issues, such as the nuclear weapons issue, that are of concern to the international community.

B. The Background for the Recent Economic Management Reform

1. Prolonged Economic Difficulties and the Disorders in the Planned Economic System

The primary reason for North Korea announcing the economic reform in 2002 is the extreme disorder in its planned economic system, leading to the collapse of its economy. During the 1990s, with the collapse of the Soviet bloc, North Korea began to experience extreme shortages of goods, and it fell rapidly into economic stagnation. In addition, North Korea had too much foreign debt and a very limited amount of hard currency; therefore, when Russia and China

requested that North Korea use hard currency in their trades, the economy was severely damaged, leading to a further deterioration in the availability of food and energy. After the fall of the Soviet bloc, the rate of operation in factories began to plummet to the 20 to 30 percent level, and industrial production was almost paralyzed.

With the collapse of the cooperative manufacturing system and the system of labor division, the North Korean government could no longer provide people with essential household items, as well as with raw materials needed for production. For those reasons, the North Korean government began to actively encourage citizens and enterprises to provide the necessary items and commodities for themselves.⁴⁷

The consumer areas of the economic system experienced prolonged paralysis of the rationing system and the state-owned businesses. As a result, markets similar in concept to free markets were rapidly formed. Illegal trade and smuggling became prevalent throughout the society; government officials became more and more corrupt. The spreading disorder in the economic and social structures caused by the economic failure made any plans set by the Central People's Committee completely impotent. After the completion of the third Seven-Year Plan in 1993, the North Korean government failed to announce any more proposals or plans.

Until recently, the North Korean government claimed that the processes of setting up plans for the economy and realizing the goals of those plans were a main advantage of the socialist economic system. The North Korean government also insisted that for the state to plan effectively to develop its economy, the production capacity must be stable, there must be close connections between different branches of the economy, and the basic economic foundation must be healthy.⁴⁸ Ironically, North Korea has not come up with any such plans since 1994, implicitly admitting the difficulties of the current condition.

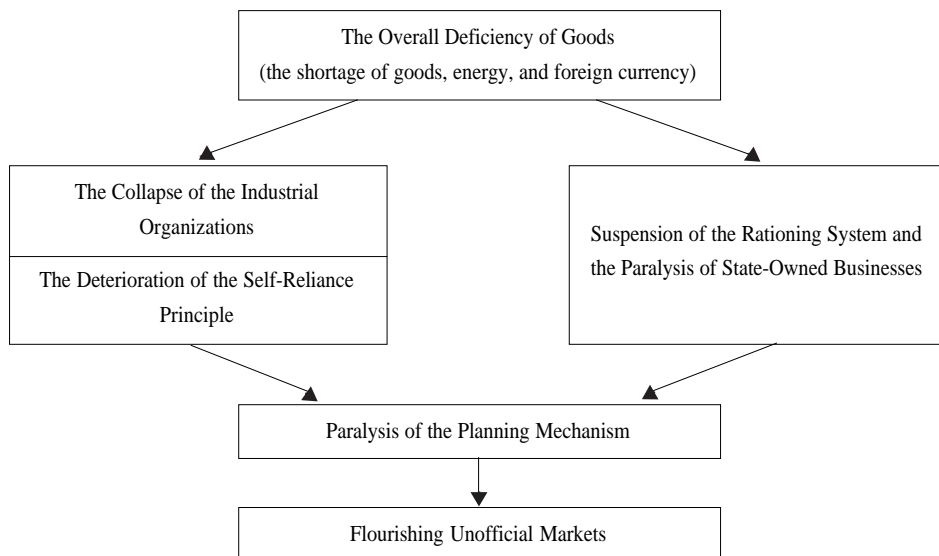
Currently, the North Korean government does not possess the economic power or the socialist policy strategies to overcome the economic confusion and disorder. The only available option was to use political oppression. However, North Korea has been using the harsh methods for decades now, and their effectiveness

⁴⁷ For example, the 6 February 1998 issue of *Rodong Shinmun* reports instances of people solving electricity shortages by constructing mid-sized power plants; producing 10,000 tons of coal annually by constructing coal mines; constructing aquatic bases and operating three vessels; constructing export bases and producing mineral water; constructing and operating metal foundries; cultivating 300 *jeongbo* of land and growing corn, potatoes, beans, etc.; and constructing a ranch on 200 *jeongbo* of land to raise goats.

⁴⁸ North Korea Social Science Publishing Company (1985, p. 308).

had reached its limit a long time ago. Therefore, the North Korean government had no choice but to move away from the quagmire of insisting that “the state will provide everything.” It had to attempt to find alternative policies where the state, enterprises, and citizens will all be equally responsible for revitalizing the economy. (See Figure 14-1 for a demonstration of North Korea’s economic collapse.)

Figure 14-1. The Structure of North Korea’s Economic Collapse



Source: Chung Yun-ho, “North Korea’s Current Economic Policy Changes,” *ERINA* (September 2003).

For a long time, the North Korean government has regarded its enterprises and citizens as working primarily for the individual and for private groups. For that reason, even if North Korea introduces a market-oriented policy, citizens might not accept it as something new.⁴⁹ Because of the possibility that economic disorder might get worse with the inexperienced application of the new strategy, the North Korean government had to choose the somewhat contradictory position of maintaining the basic structure of the controlled and planned economy and the priority of political logic while partially opening its doors to foreign companies, legalizing the underground economy, and introducing the

⁴⁹ See internal explanatory guideline from North Korea’s economic management reform measures (July 2002, 2).

incentive system in which every individual equally holds responsibility for economic development. This responsibility-sharing policy was what later turned into the reform measures.

2. The Laxity of Public Discipline and the Change in People's Consciousness

One of the principal reasons that caused the North Korean regime to initiate reform measures is the growing deterioration of social and political order. In North Korea, prolonged economic difficulties are causing serious social and political chaos and are leading to lax public discipline. The underlying cause of this chaos is the collapse of citizens' trust in government. Because the state is unable to take care of citizens' necessities, such as food, clothing, and shelter, owing to the economic difficulties, the citizens are desperately trying to improve their own lives. As a result, the deterioration of the socialist political and economic order is spreading. The wages that citizens are receiving for their labor in the state-owned enterprises are not enough to cover the costs of goods in the unofficial markets. As a result, people are trading illegally in unofficial markets, where profits are always higher, rather than working in the state-owned enterprises. Those tendencies are spreading, fueled by the extreme food shortage that began in 1995.

During this time, Kim Jong-il pointed out that the society was turning into a state of anarchy.⁵⁰ During the memorial ceremony for the fiftieth anniversary of Kim Il-sung University in December 1996, Kim Jong-il deplored that "As I was approaching the Chollima Steel Complex, the streets were full of people looking for food. The same thing is happening around the country, and the trains and train stations are packed with people all looking for food. Because of the current food shortage, the state is nearing anarchy."⁵¹

In addition, North Korea's economic difficulties are leading to increased crime rates for fraud, embezzlement, and larceny of government properties. The people committing those crimes include average workers, police officers, soldiers, and even government officials, ranging from low-ranking government officials to the highest party leaders. In fact, almost all members of society are participating in illegal transactions of some sort.⁵² The most damaging crimes are the larceny

⁵⁰ Kim Jong-il, "The speech given at the Kim Il-sung University's fiftieth anniversary in December 1996," *Monthly Choson* (April 1997): 308–09.

⁵¹ *Ibid.*, 309.

⁵² Based on interviews with North Korean defectors in June 2003.

of government commodities and illegal transactions. The usual pattern of those crimes involves (a) a party executive purchasing various goods at cheap government prices and selling them in the black market, (b) factory executives illegally selling factory-owned resources or finished products on the black market, (c) soldiers illegally trading army food in the neighboring regions of army bases, or (d) the staff of a trading firm illegally selling imported goods.⁵³

The continuing economic difficulties are transforming the social class structures. The economic difficulties are forcing people to fight for their survival and are creating a class of winners and losers. Most of the winners are those involved in illegal transactions at the black markets or those who use their political power and leverage to accumulate personal wealth by appropriating government commodities and selling them on the black market. The losers are usually people who are not involved in illegal transactions and are living “faithfully,” relying on the state supply lines. Most of the losers were formerly leading figures of North Korea and were so-called “white collars” who value their honor and reputation. Along with transformations in the social class structures, the gap between the rich and the poor is widening. In the past, the Koreans who had lived in Japan but came back to North Korea formed the core of the wealthy class. Now, with the expansion of unofficial transactions, people with money-making skills are forming a new wealthy class. The North Korean government is treating this new wealthy class as heroes who have led the “arduous march” to a victory, which is affecting the citizens’ morale. Currently in North Korea, the belief in rations as a show of the leader’s grace is deteriorating fast, and the main interest of the citizens is finding ways to make more money.⁵⁴ The drastic changes in the social structures that once sustained North Korean society, plus the widening gap between the rich and poor, are making the North Korean government extremely nervous. Kim Jong-il also realized the seriousness of the situation and asked for changes to be made on several occasions. For example, during a conference with party executives in 1995, Kim Jong-il harshly criticized the situation and stated that “Some college graduates, instead of working in their fields of major, are requesting to be placed in foreign trading industries or in cooperative businesses. This is an act of selfishness, looking for personal gains to live well, instead of serving the party and the country that have graciously fed and clothed them.”⁵⁵

⁵³ Interviews with North Korean defectors in June 2003.

⁵⁴ Chung Yun-ho, “North Korea’s Current Economic Policy Changes,” *ERINA* (September 2003): 19.

⁵⁵ Kim Jong-il (1995, 11).

Simply put, owing to the extreme economic difficulties in North Korea, the basic social mechanisms of political and moral stimulation has greatly weakened. The political integration of the society is also experiencing extreme setbacks because of the citizens' ideological deterioration. However, the North Korean government has been able to maintain its political strength despite the ongoing problems because the idolization of its leader is still a powerful force, the violent and oppressive ruling system is at work, and some people still hold fast to their blind devotion. The North Korean government is fully aware of the fact that the main cause of all their problems lies in economic difficulties and that their social and political problems will get worse if economic recovery does not soon occur. For that reason, to stabilize the economy and increase production, North Korea has decided to go ahead with economic management reform measures.

3. The Failure of Foreign Relations Improvement Policy

In the past, North Korea showed a tendency to use noneconomic means to solve economic difficulties. The primary example is the policy of the "arduous march," introduced in the middle of the 1990s to deal with the faltering economy. The underlying principle of this policy was to overcome difficulties through strong will power, spirit, and belief that if all citizens constantly save and work in their fields by giving their best according to the collective mentality of "creating something from nothing," then the difficulties will eventually be resolved. In short, this policy is based on a highly ideological, abstract, and noneconomic logic.

The economic development of a planned economic structure, as well as a market economic structure, can be achieved only when there are increases in the inputs of resources needed for production. In other words, economic development is achieved only with an increase in either the capital or the labor input, or through a technological advance. "The economic theory of *juche*," which is used as a textbook in universities in North Korea, also touts this logic.

An objective assessment of North Korea's current economic situation shows that an increase in capital input is the most badly needed. For the North Korean economy to achieve growth, capital resources are needed to modernize its old manufacturing technology and to acquire raw materials needed for production. However, because this necessary capital is not available in North Korea, the government must introduce those funds from foreign sources. To ensure a continual and smooth flow of funds, North Korea should enforce a peaceful and friendly foreign policy with the appropriate legislation to form an environment hospitable to foreign investment. The former mainly involves resolving issues

with the United States, and the latter involves North Korea preparing an investment-friendly environment through reform and liberalization.

However, until recently, foreign relations were not regarded as very important in North Korea's economic policies. It would not be an exaggeration to say that North Korea's economic difficulties have, in part, been created by the government's guarded and closed foreign policies and its failure to improve foreign economic relations. At a time of such enormous economic difficulties, North Korea—instead of actively trying to improve its foreign relations to ensure economic recovery—has chosen instead to aggravate its relationship with the United States and has chosen a road opposing the rest of the world, resulting in further deterioration of its economy. What efforts that North Korea has made to improve its foreign relations have been frustrated because they avoided any important issues that the world was demanding that the North Korean government resolve.

North Korea's current investment environment is inhospitable to foreign investment both politically and economically, and it seems unlikely that North Korea will attract any big investments from foreign companies toward revitalizing the economy. One of the basic conditions for inviting foreign capital is the normalization of relations between North Korea and the United States. However, since the inception of the Bush Administration in 2001, relations between the two countries have taken a turn for the worse. Relations with Japan are also yielding no satisfactory results because of the abduction issue. In addition, since the revelation of North Korea's nuclear weapons efforts, international humanitarian aid has been reduced, and few countries are now willing to provide any large-scale economic support. For those reasons, North Korea cannot rely on outside sources for help with its economic difficulties. In this regard, North Korea intends to endure its economic difficulties by strengthening the efficiencies of its internal economic system and by sharing economic responsibilities with all of its economic organizing structures until relations between North Korea and the United States are normalized. This intent is well reflected in the reform measures, which focus on domestic factors and are predicated on the assumption that international support will not be sufficient.

C. Conclusion

The following major points can be made upon analyzing North Korea's economic policy changes, as outlined in the country's July 1 Reforms.

First, by transforming its rigid management method, driven by politics and ideology, to a more materialistic method, North Korea is trying to provide an incentive for enterprises and laborers to work and to increase their productivity,

which will affect economic recovery. Second, North Korea has introduced a new concept of price-setting so it can reduce the damages to the state's enterprises by decreasing the disparity between the price and the value of products. Third, North Korea is trying to introduce smoother administration of the domestic cooperative manufacturing system by reducing confusion in the corporation structures by realistically adjusting the production goals and the goal-achieving processes. Fourth, North Korea is encouraging workers' originality and earnestness by strengthening the independence of regional governments and individual enterprises and, thereby, distributing the state's economic responsibility and burden to the lower economic units.

North Korea's current policy changes are not restricted to a specific field but are being applied to the overall economy. Therefore, the changes can be considered quite revolutionary. Furthermore, North Korea's attempt at departing from its past ideology and logic in introducing the policy changes is also very encouraging.

However, we cannot conclude that North Korea is completely moving away from its previous political doctrines and ideology. North Korea has, in fact, stated that "the economic management reform measures of July will produce profitable results while still firmly adhering to socialist principles, and [the change] is a road to the completion of socialist economic reform."⁵⁶ This standpoint is frequently commented on in the media. However, not all the economic policies being introduced in North Korea are as socialist oriented as North Korea claims. In general, economic reform of socialist countries involves three basic elements: price reform, decentralization of the decision-making process, and reform of rigid production goals. July's reform measures also reflect those three precedents of socialist reform. For that reason, North Korea's recent changes in economic policies are considered quite revolutionary, despite what North Korea may claim.

Even North Korea's high government officials now frequently use the term "reform."⁵⁷ North Korea's current economic policy changes can be more appropriately described as market-oriented reform. However, North Korea still needs many additional policy changes before its economy can be expected to fully recover. Future policy changes should be toward a more market-oriented and outward-oriented economy and must be accompanied by a stable foreign policy.

⁵⁶ *Rodong Shinmun* (22 October 2001).

⁵⁷ An Suk-kyo (1989, 129).

Reference

In Korean

Chung Yun-ho. "North Korea's Current Economic Policy Changes." Paper prepared for a conference held by Economic Research Institute for Northeast Asia (Nigata, Japan) in September 2003.

Choson Sinbo. 2 August 2002. "Farmers, Production's Owners,"

Choson Sinbo. 26 July 2002. "Higher, Faster, in the Field of Economic Growth (vol.4): Brave and Forward Reform Measure."

Choson Sinbo. 2 August 2002. "Price Adjustment for Manufacturers."

Choson Sinbo. 26 July 2002. "The Creation and Reform for the Economic Revival."

Kang Il-chun. "Evaluation of North Korea's July 1 Economic Reform. A paper presented in the international conference held on July 2003 by the Department of North Korean Studies of Korea University.

Kim Jong-il. April 1997. "The speech given at the Kim Il-sung University's fiftieth anniversary in December 1996," *Monthly Choson*, pp. 308–09.

Korea Institute for International Economic Policy. *North Korea Development Report 2002*. Seoul: Korea Institute for International Economic Policy
Ministry of Unification. *Abstracts of the North Korean Economy*. Seoul: Ministry of Unification, Various Issues.

Rodong Shinmun (22 October 2001). "A Guide to the Socialistic Economic Management."

Shin Ji-ho. 2003. "The North Korean Economy after the July 1 Reform," Korea Development Institute, *KDI North Korean Economic Review* vol. 5, no. 7.
Social Science Publishing Company. 1985. *Dictionary of Economy*. Vol.1-2. Pyongyang: Social Science Publishing Company.

Internal explanatory report for the economic management reform measures. July 2002.

North Korean Central News Agency

Chosun Ilbo

Choson Sinbo

JoongAng Ilbo

Yonhap News

Chapter 15

The Features and Problems of the Recent Economic Policy Changes

The July 1 Economic Reform steeply increased wages and prices, decentralized economic management, strengthened the independence of businesses, improved the agricultural sector, and caused the discontinuance of convertible notes. Those measures were carried out through several cabinet decisions: Decision No. 22, No. 128, and No. 129. The economic policy changes are so considerable that they could be regarded as economic “reform.”¹ The economic management adjustment measures are still on the way. For example, “the farmers’ market has been enlarged to a general consumers’ goods market”² since the beginning of 2003. Researchers in North Korean studies have different ideas on how to evaluate the features and aims of the nation’s ongoing economic reform. Some see the policy change in 2002 as a preparatory stage for a market economy, but others say the changes merely aim to normalize the socialist economy. This chapter examines more of the features and problems of North Korea’s recent economic policy.

¹ On 2 September 2002, Kim Yong-sul of the North Korean Ministry of Trade explained North Korean economic measures using the term “economic reform” during an international conference on the North Korean economy adjustment held in Tokyo under the joint auspices of the East Asia Trade Research Board and the Korea Economic Cooperation Association.

² North Korean Central News Agency (Jungang Tongshin), 10 June 2003.

A. A Review of North Korea's Economic Policies Prior to the July 1 Reform

1. The Main Features of Economic Policies until 1980s

North Korea has previously pushed a coherent policy of a “socialist planned economy” and an “independent national economy.” An independent national economy policy means to build up an independent economy that is based on domestic resources under external circumstances such as the Korean peninsula armistice and U.S. economic sanctions. Under that policy, the North Korean economy depended on domestic resources such as coal, electricity, and iron, which is why the coal industry, the iron and steel industry, and the machinery industry became the center of industrial policy and yet other industries such as the petrochemical industry fell behind.

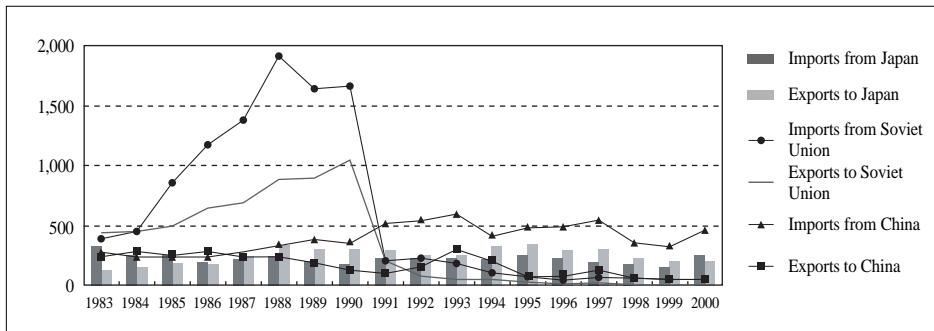
China's economic development following the policy of reform and liberalization in the 1980s also affected North Korea. North Korea once mapped out a plan to open Nampo, Chongjin, and Rajin as international cities (Kim Il-sung 1983) and enacted the joint ventures law in 1984 as the beginning of its foreign capital inducement policy. The economic policy in the 1980s was to pursue industrial development by making up the deficit in domestic resources by expanding foreign economic relations while building an independent national economy. However, seeing the political conflicts in the Communist Party of China during its policy reforms of 1985, North Korea judged that opening the economy would cause political instability. Thus, it backed away from any open-door policy or foreign capital inducement policy.

At that time, North Korea did not accept China's theory that economic reform and opening the country to a market economy was not opposed to a planned economy and that the countries could coexist (Communist Party of China Central Committee 1984). North Korea, therefore, held fast to a planned economy system. Also, in foreign economic relations, North Korea intensified its economic relations with the Soviet Union much more than with China. It concluded a commercial and economic cooperation treaty with the Soviet Union in 1985, and in November 1986 it concluded a long-term commodity trade and payment agreement for the period from 1987 to 1990. In 1988, North Korea's exports to the Soviet Union amounted to \$890 million, and imports from the Soviet Union amounted to \$1.92 billion. This deficit rapidly increased North Korea's national debt. With the collapse of the Soviet Union in 1991, North Korea's economic structure—dependent on the Soviet Union—also collapsed. With the resultant switch to payment in hard currency, the North Korean economy faced an economic crisis and deficits in raw materials, energy, and capital goods supply.

(See Figure 15-1 for the country's trade developments)

Figure 15-1. North Korea's Trade Development with Its Major Trading Partners

(unit: million dollars)



Source: KOTRA (Korea Trade-Investment Promotion Agency).

North Korea's economic policy until the 1980s was to maintain an independent and self-sufficient national economy despite the shortage of resources. It maintained a socialist planned economy that unified the economic plans for the country through the collective socialist ideology of *Ilsim Dankyul* (one mind, one unity) of the Workers' Party and People and of mass mobilizations such as the *Chollima* movement and the *Sokdojon* (speed campaign). Heavy industry was highest in priority, followed by light industry and agriculture. And the Dae-an work system stressed the triumvirates of the Workers' Party factory committee, manager, and chief engineer of the factory in the management of a business. They implemented a *Doklip Chaesanje* (a self-supporting accounting system), imparting relative independence to the businesses even under the unified central controls. A self-supporting accounting system was a type of socialist incentive system in which each business could increase workers' morale with any remaining amounts from its profit—after paying the total cost of production and the money due to the country. This system was based on a materialistic evaluation of the results of a business operation, and it became the foundation for measures to improve business operation management after 2000. (See Table 15-1 for characteristics of the management policies.)

However, North Korea had to repeat the application of a campaign style of economic policy—one that shows immediate economic results through concentrated input of human resources and selective input of resources—because its economy has always suffered from a shortage of raw materials and could not develop any technical innovations.

Table 15-1. Characteristics of North Korea's Typical Economic Management Policies

Classification	Contents
Management Principles	<ol style="list-style-type: none"> 1. The principle that political work must be given priority <ul style="list-style-type: none"> - The organization of economic affairs can be operated satisfactorily only when it is combined with political work. <ul style="list-style-type: none"> → To encourage workers' productivity and positive morale through political/ideological incentives rather than material incentives 2. The principle that collective guidance and unified control systems must be combined <ul style="list-style-type: none"> - Collective guidance: The party committee, the highest guidance apparatus of any economic unit, determines and guides the direction of economic operation. - Unified control system: The administrative manager solely guides the operations determined by the party committee in the factory. - The way to combine collective guidance and a unified control system is perfect performance of the mass line. 3. The principle of unified and detailed planning <ul style="list-style-type: none"> - To solve the imbalance among economic sectors resulting from the planned economy system - To strengthen the centralized functions of economic management 4. The principle of a self-supporting accounting system <ul style="list-style-type: none"> - Each production unit conducts production operations within the provided means of production and plans directed by a superior management authority and takes the responsibility for accountability. - This principle was first carried out by state-owned enterprises in 1962 and was extended to unproductive enterprises in 1984.
Management Methods	<ol style="list-style-type: none"> 1. The <i>Chongsanri</i> Method <ul style="list-style-type: none"> - A superior authority helps a subordinate authority, or a senior helps a junior to accomplish the party policy. - Always seek solutions based on field situations. - Political work takes priority in every operation. 2. The <i>Daeam</i> Work System <ul style="list-style-type: none"> - Production operations are managed under each factory party committee's collective guidance and responsibility. - The planning, production, and technical guidance work is conducted under a chief engineer's guidance, and administrative and economic work such as supply services for production materials and welfare are operated under a manager's guidance. 3. Self-supporting Accounting System <ul style="list-style-type: none"> - There are fully self-supporting accounting systems, half self-supporting accounting systems, and dual self-supporting accounting systems, according to the target and the operation level. - Each has a separate balance sheet and has some flexibility in buying and selling. 4. Socialist Competition <ul style="list-style-type: none"> - Competition inducement among all units will achieve projected goals. - Economic stimulation assemblies play important roles in economic application. - The <i>Chollima</i> work group movement the Three-Revolution Red Flag Movement, <i>Sokdochon</i> (the speed campaign), etc., are models of competition.

Source: *Economy Dictionary*, 1985.

Since his appointment as the formal successor of Kim Il-sung and as a member of the Korean Workers' Party Politburo in February 1974, Kim Jong-il prescribed the *Sokdochon* (speed campaign) as the basic style of socialist economy construction until the mid-1980s.³ Most of the “campaign” style of economic guidance such as the “70-day campaign” in 1974, the “100-day campaign” in 1978, the “200-day campaign of transportation revolution” in 1978, and the “speed campaign of 1980s” in 1982 were led by Kim Jong-il. Kim Jong-il's ideas for his economic policies in the 1970s and the 1980s, when he was guiding the economy, were published in 1996 in *The Ideological Principles of the Great Leader Comrade Kim Jong-il: Economics 1–4*. The main concepts are as follows:

-
- “*Sokdochon* (speed campaign) is a basic battle style of socialism construction driving forward all work” (*Economics 1*, 180).
 - “Using economic rules and categories reflecting transitional characters in a socialist society is only to realize unity and cooperation based on collective improvement and to strengthen a socialist planned economy. It can't be used to promote individualism and selfishness and to revive a capitalist market economy” (*Economics 2*, 125).
 - “In socialist economic management, we need to go forward focusing on political means. Political means is the most important means in socialist economic management” (*Economics 3*, 122).
 - “Material stimulus reflects a transitional character of the socialist society and is one of the very important factors needed to realize economic technological development. The material stimulus in a subjective socialist economic management principle is only an economic means to realize the collective principle” (*Economics 3*, 156).
-

Here we can see that Kim Jong-il places a high priority on political methods and collective management. However, the limits of a campaign style economic policy and too much priority on heavy industry caused a structural imbalance that deepened among different industrial sectors and led to the stagnation of the agriculture and light industry sectors, plus a lack of social capital.⁴ It is reported that Kim Jong-il did not engage in economic management until the mid-1990s. Instead, he devoted himself to guiding the Korean Workers' Party and the Ko-

³ Kim Jong-il seemed to concentrate more on the military sector than on the economic sector, starting in the late 1980s. In May 1990, Kim Jong-il took office as the first vice-chairman of the National Defense Commission. In April 1993, he took office as the chairman of the National Defense Commission, thereby seizing full control of the military sector. From 1997, he turned to the economic sector again.

⁴ In 1989, North Korea announced the three-year light industry development plan (1989–1991) and called that year “the year of light industry,” to reduce the structural imbalance. But those efforts could not achieve the expected results because of the sudden collapse of the Soviet bloc.

rean People's Army.⁵

A series of economic policies—such as increasing trade with the Western capitalist world after the 1970s, establishing the joint ventures law and increasing trade with the Soviet Union in the 1980s, and establishing SEZs in the 1990s—can be seen as supplementary policies to make up for the domestic economy's chronic shortages and to introduce raw materials, capital goods, technology, and funds.

2. The Economic Policies of the 1990s

According to an estimate by the Bank of Korea, North Korea's economy recorded negative growth for nine years after 1990. As a result, its GDP decreased to \$573 per capita in 1998, from \$1,142 in 1990. North Korea called the latter half of the 1990s—when the economic crisis was at its peak—"the Arduous March." Industrial production was paralyzed because of shortages of food, energy, and foreign currency, and natural disasters such as floods led to starvation. Under such a severe economic crisis, the North Korean government conducted several partial adjustments of its economic policies.

a. Establishing the Special Economic Zone and Carrying Out the "New Economic Policy" (until 1997)

After the late 1980s, when North Korea was faced with the collapse of the Soviet bloc, it tried to overcome the economic crisis by establishing a special economic zone to attract foreign capital. The planned SEZ was in the Rajin-Sonbong area (the present Rason), which is located far from Pyongyang and could be combined with the Tumen River Area Development Program (TRADP). The TRADP was at that time the model of multilateral economic cooperation in the northeast Asia region.

North Korea made its position clear regarding the Rajin-Sonbong Free Economic Trade Zone, which was established to combine the national economy's self-sufficiency development process and the conditions for international cooperation. Professor Kim Soo-yong at Kim Il-sung University explained the significance behind the establishment of the Rajin-Sonbong Free Economic Trade

⁵ During a speech on 11 July 1994, Kim Jong-il explained that he did not directly engage in economic management because "Our great leader (Kim Il-sung) requested me repeatedly to put more efforts into strengthening the Korean Workers' Party and the Korean People's Army without engaging in administrative/economic affairs, saying that achieving our country's revolution is not easy work."

Zone during his speech in Tokyo, Japan, in November 1995:

From the beginning, the Democratic People's Republic of Korea chose a domestic market-oriented economic development model. This model was designed to fulfill the demands of the domestic market with its own production, based on internal accumulation, and to build the domestic economy by utilizing its own resources, capital, technology, and human resources. DPRK's subjective conditions, namely complete reconstruction from the ashes of war—and its objective conditions—namely the capitalist nations' sanctions against DPRK—were well reflected in the model. It was established as an independent national economic construction policy, and within this process DPRK tried to expand economic exchanges with capitalist countries. In consequence, from the 1980s onward, dependence on foreign ties increased and led to a shift to a new level of external economic exchanges. Trade relations developed into joint ventures (the first joint venture law was enacted in 1984). In the 1990s, as the Cold War structures were dismantled, transideological economic exchanges became an international trend. The collapse of the Soviet bloc that accounted for 70 percent of DPRK's external economic exchanges resulted in changes to DPRK's independent economy construction policy. Against the backdrop of the subjective and objective conditions that necessitated DPRK's domestic economic development and a transition to international cooperative exchanges, the Rajin-Sonbong Free Economic Trade Zone was established in December 1991. During the twenty-first General Assembly of the sixth Party Central Committee in December 1993, a new open-door policy was formulated through a review of the third Seven-Year Plan, which aimed at: (a) inducement of new technology, (b) a balance of foreign currency, (c) peace and security in northeast Asia through increasing regional cooperation, and (d) priority on trade.

North Korea set up this strategy so it could acquire the necessary foreign currency and technology through industrial complexes and tourism. It set up the Rajin-Sonbong zone as the physical distribution hub for northeast Asia. Beginning in 1993, the political situation on the Korean peninsula ran into a crisis as tension mounted between North Korea and the United States as a result of suspicions over the North Korean nuclear weapons program. Thus, no actual progress took place in North Korea's plans until the Agreed Framework of October 1994.

In December 1993, North Korea held the twenty-first General Assembly of the sixth Party Central Committee and summarized its third Seven-Year Plan (1987–1993). In the meeting, the government acknowledged the failure of its

economic plan and brought out a new economic policy that set the three-year period beginning in 1994 as an economic buffer period. This “new economic policy” was practical and aimed at (a) emphasizing the self-sufficiency of each district, (b) focusing on agriculture and light industry to reduce common people’s dissatisfaction, and (c) earning foreign currency by increasing trade with capitalist blocs. The aim of this policy was to overcome the supply difficulties resulting from centralized planning. A slogan, “The Three First Priorities: Agriculture, Light Industry, and Trade” was created. The policy was aimed at strengthening light industry and agriculture, which had been weakened as a result of policies that almost exclusively pushed heavy industry, through an economic policy focusing on foreign exchange and trade. (See Table 15-2 for historical foreign policies.)

Table 15-2. Major Foreign Policies before the New Economic Policy

First Joint Venture Law in 1984	Special Economic Zone Establishment in 1991	New Trade Policy in 1992	New Economic Policy in 1993
- Beginning to attract foreign enterprises’ investment	- Positively driving foreign capital investment - Promoting foreign currency imports	- Adjusting import and export management system - Combining production and trade - Promoting cross-border trade and intermediary trade - Promoting joint ventures - Light industry first policy - Trade first policy	- Agriculture first policy

(1) *Agricultural Sector.* China dismantled the collective “people’s commune” and created family farms as a part of its reform and liberalization policy, and it succeeded in rapidly increasing agricultural production. However, North Korea maintained its agricultural policy of converting collective farms into state-owned farms in its transition of “cooperative property” into “property of the whole people” as a part of its socialist development until 1995. In 1995, a great flood that collapsed dams and washed away farms devastated the agriculture sector. In 1996, North Korea suspended the nationalization of farms and implemented a policy to divide production units more practically. The number of members composing a “sub-work team,” a collective’s basic organizational unit, was cut from 20 people to 7–10 people. The farmers were allowed to use any excess products. Although this adjustment measure didn’t go as far as creating private farms, the

farmers' market was revitalized as farmers gained some rights to the disposal of agricultural products.

(2) *Light Industry Sector.* Despite the establishment of a policy putting first priority on light industry, the overall economic policy was still focused on energy and heavy industries such as coal, electricity, railroad transportation, and metal. From the beginning, light industry was regulated as a local industry. It could not become an export industry because it did not receive enough national investment and produced only consumer goods with local resources, resulting in very low quality. To solve this problem, the North Korean government implemented a policy to increase exports by encouraging "processing on commission" deals in the light industry sector, with the textile industry as a representative case. However, national investment in light industry for domestic consumption continued to be negligible.

(3) *Trades and Inducement of Foreign Capital.* The new economic policy attached greater importance to trade and the attraction of investment from capitalist nations. It distinguished national and local trade and allowed each local district to conduct its own trade, while trade management organizations in the central government were merged or closed down. Each production unit was also allowed to establish a trading firm to engage in trading. With the Agreed Framework in October 1994, North Korea and the United States were able to tentatively resolve the nuclear crisis. North Korea was able to attract foreign capital into the Rajin-Sonbong Free Economic Trade Zone in 1995.

In September 1995, North Korea held the first forum to attract foreign capital in Beijing; in September 1996, the first international investment forum was held in North Korea at the Rajin-Sonbong zone.⁶ In June 1997, North Korea carried out innovative economic operations in the Rajin-Sonbong zone. Those measures were (a) to entrust regional organizations with authority over investment matters, (b) to introduce the market pricing system (abolition of a ration system, rise in prices), (c) to unify the exchange rate and introduce the floating exchange rate (exchange rate fluctuates at about 200 won against the dollar), (d) to open an independent enterprise and free market (Wonjongri border market), and (e) to educate people in the market economic system (reorganization of the Rajin College). Such measures carried out in the Rajin-Sonbong zone could be seen as

⁶ At the international investment forum about the *Rajin-Sonbong* Free Economic Trade Zone, four contracts totaling \$265 million, including one with the Emperor group of Hong Kong to invest in a casino hotel (\$180 million), and twelve agreements totaling \$563 million were entered.

experiments for the economic management improvement measures of 2002. North Korea also made efforts to increase economic exchange with capitalist nations by, for example, exploring the establishment of a “bonded processing zone” in Nampo and Wonsan next to the Rajin-Sonbong zone (East Asia Trade Research Board 1997).

Despite the new economic policy initiatives, North Korea was suffering from extreme economic stagnation. There was a vicious circle in the economy: the shortage of foreign currency led to the shortage of energy and raw materials, which led to the decrease in industrial production, which led to the decrease in exports, which led to the shortage of foreign currency once again. The economic crisis was exacerbated by natural disasters like a great flood and drought. The centrally controlled economic policies became impotent.

In the period between Kim Il-sung’s death in 1994 and 1997, Kim Jong-il concentrated mostly on managing the military. North Korea calls it the beginning of a “Military-First Politics” (*Rodong Shinmun*, 3 October 2000). During that period, the administrative affairs department was in charge of accomplishing the new economic policy for the Korean Workers’ Party. And the party placed the highest priority on preserving the national structure with the military.⁷

b. The Revolutionary Economic Policy of the Workers’ Party (from 1998 to 2000)

The Kim Jong-il era officially began with his appointment as the General Secretary on October 1997. During this period, North Korea became increasingly wary of foreign capital because of the East Asian currency crisis. The domestic economy was suffering from a severe food crisis and the stagnation of industrial production. It coped with the internal and external crises by returning to the policy focused on heavy industry while reviewing the new economic policy such as the trade policy (the joint discourse of the *Rodong Sinmun* and *Keunroja* [workers], 17 September 1998). To do so, the North Korean government changed its propaganda slogan from the “Arduous March” to “*Kangsong Taeguk Gunsul*” (building a powerful nation) and clarified the priority of building a strong economy

⁷ Chairman Kim Jong-il explained the reasons for his concentrating on managing the Korean People’s Army during a speech on 3 March 1997: “You should know why I often go to check the military units and not factories or agriculture when the economic situation of the nation is in difficulty.... Under the present world situation, if we want to shatter the imperialists’ and reactionists’ continued efforts to isolate and repress us and if we are to persevere and glorify the outcome of revolution, we must strengthen our armed forces.”

that was based on military and ideological strength.⁸ The direction of this security-oriented policy placed more value on investment in the military sector than on investment in economic revival, and the new economic policy was suspended.

(1) *The Implementation of the Revolutionary Economic Policy.* In January 1998, Chairman Kim Jong-il began direct management of the economic sector by conducting on-site guidance of economic production spots in the Jagang Province. During the intense guidance in 1998, a new phrase, “*Kangkye spirit*,” was coined as a model for economic revival. The meaning of the phrase was that the *Inmin* (people) should solve economic difficulties for themselves even if the central government cannot supply them with enough resources. It encouraged people to get through the period of the Arduous March with self-reliance and to revive the economy and build a *Kangsong Taeguk* (a powerful nation). Continuous intensive field guidance existed in economic sectors such as the “Beacon of Songkang” (field guidance of Kim Jong-il at Songjin Steel Complex in March 1998), the “Potato Revolution” (field guidance of Kim Jong-il at Daehongdan district state farm in Ryanggang Province in October 1998), the “Land Improvement” (land leveling and re-zoning projects in Kangwon Province in February 1999, a series of land realignment works carried out in North Pyongang Province and South Hwanghae Province), and other economic fields such as pisciculture, livestock industry, and technology.⁹

North Korea resumed its campaign style of labor mobilization as a means to drive the recovery of the economy. It revived the Chollima movement that began just after the Korean War, and the name of the Rajin-Sonbong Free Economic Trade Zone was changed to the Rajin-Sonbong Economic Trade Zone in March 1998.¹⁰ Then, the Wonjongri border market was closed. In 1999, through an amendment of the laws for the Rajin-Sonbong Zone, the central government

⁸ The formal opening to the public of the *Kangsong Taeguk* line was in an article of *Rodong Shinmun* (22 August 1998).

⁹ The total number of times that Chairman Kim Jong-il provided field guidance in 1988 was fifty-eight, including forty-six times (79.3 percent) on the military and seven times (12.0 percent) on the economic sector. In 1999, the total number was fifty-three times, thirty-three military-related (62.3 percent) and eighteen economy sector (34.9 percent). In 2000, the total was thirty-eight times, twenty-one military-related sector (55.2 percent), and thirteen economy sector (34.2 percent).

¹⁰ Bang Yong-duk, the chairman of the People’s Committee of *Nampo* city, wrote an article in *Keunroja*, the bulletin of the Korean Workers’ Party on 3 August 1998. In the article, he stated that “the new *Chollima* movement is the revolutionary marching campaign for the great victory of our own style socialist works.” In fact, “Under the present situation of trials and difficulties, we are requested to show the spirit of postwar rehabilitation and the combative spirit more positively.” After that, the Second *Chollima* movement concept was set down.

took back its power over investments that had been delegated to the zone authority (Lee Chan-woo 2000). The economic policy from 1998 to 2000 was called “The revolutionary economic policy of the Party.” Park Song-bong, then first vice-director of the munitions industry of the party, insisted in an article in the March 2000 issue of *Keunroja* that “The revolutionary economic policy of the party” is “the most accurate guidance for socialist economic construction. It defined how to properly solve economic problems and solve problems in people’s daily lives, especially under the present conditions where imperialists are posing more and more economic sanctions to the DPRK and a socialist market no longer exists” (Park Song-bong 2000, 45–48). The policy contains several ways to achieve the national aim of *Kangsong Taeguk* (a powerful nation): (a) to build and use effectively the *Uri-sik* (our own style or Korean-style) economic foundation and structures; (b) not to accept capitalist reform or reorganization (a market economy causes economic dislocation or disorder, production decline, and mass unemployment); (c) to maintain the principle of centralized and planned management and guidance of the economy; (d) to pursue the principles of properly combining material incentives with a foundation of political and moral incentives, plus preserving benefits for economic activities; and (e) to seize key sectors of the economy such as the metal and machinery industry sectors, as well as to prioritize problems by order of importance.

The crux of this economic policy could be understood as the addition of a policy for obtaining profit from economic operations to the traditional economic policy line of North Korea. In the agricultural sector, the policy encouraged potato production, arable land extension, double-cropping, etc. It also defined the normalization of electricity production and domestic resources such as coal as the first task in solving the energy supply problem, which was the key issue for the normalization of heavy industry. Even in the economic policy of 2002, North Korea emphasized the practical needs of the independent economy and maintained the position that “electricity, coal, metals, and railroad transportation are the main battlegrounds for economic construction, and it is in these points that we should make an economic breakthrough.”¹¹ This has been the basic position of North Korea throughout the Kim Il-sung era.

(2) *The New Economic Policy through the Amendment of the Constitution.* Kim Jong-il was re-inaugurated as the chairman of the National Defense Commission at the first meeting of the tenth Supreme People’s Assembly in Septem-

¹¹ The joint editorial in the *Rodong Sinmun*, *Choson Inmingun*, and *Chongnyon Jonwi*, 1 January 2002.

ber 1998, thus announcing political stabilization to the world. North Korea then went on to amend its constitution. In the amendment, the Administrative Affairs Department was renamed the Cabinet and its status was raised to the much higher level of an independent apparatus, answerable only to the Supreme People's Assembly, without any supervision from any other apparatus. In other words, North Korea established a system whereby the Cabinet could push ahead with its economic policies and be responsible only to the party and the nation. All economy-related departments were merged or shut down, and technical experts replaced most officials in the economic sectors. In 1994, North Korea implemented a system oriented toward administrative affairs to drive the new economic policy, and the parliamentary cabinet system became the central command for the economy.

There were also additions to constitutional articles regarding the economy. The additions provided for an enlargement of personal property, a self-supporting accounting system in economic management, an introduction of the concept of profit, an increase in trade, and a foreign capital attraction in the SEZ. The government made clear that the economic policy should be to pursue profits. There are some similarities and differences between North Korea's amendments and China's amendments in their early period of reform and liberalization (1982), as shown in Table 15-3.

Table 15-3. Similarities and Differences between North Korea's Amendments (1998) and China's Amendments (1982)

Similarities	Differences	
	North Korea	China
- To adhere to the principle of public ownership	- The right to establish an enterprise in a special economic zone (economic cooperation had already been allowed in the 1992 Amendment)	- Permit foreign countries' investment and economic cooperation
- To permit private ownership	- No mention of market economy	- Approve complementary operations of market regulations along with the planned economy
- To implement a management system of accountability		
- To emphasize productivity and economic efficiency		
- To engage in economic cooperation with foreign countries		

China pushed the family farm management system in its domestic economic sector, placing a high priority on agriculture reform even though it was not stipulated in the constitution. However, North Korea did not make a single attempt to transfer the collectives into family operations. Also, while China actively introduced the market economy system as a complementary concept to a planned

economy from the beginning of its reform and liberalization, North Korea maintained its negative position about the market economy. North Korea held on to the position that a market economy could be carried out exclusively in an SEZ and provided for establishing an SEZ in the constitution.

The economic policy reflected in the amendments to North Korea's constitution is, therefore, a partial open policy that sticks to the basic principle and rejects a switchover to a market economy, while increasing the economic efficiency by intensifying a self-supporting account system and allowing contacts with a market economy in certain regions to cope with the economic crisis. North Korea apparently chose an economic policy different from China's reform and liberalization policy. It introduced some measures for exchanges with capitalists, such as establishing the limited special economic zone, but excluded any possibility of the capitalist economy spreading into the country.

However, it is possible that constitutional provisions that seemed to spell a return to a conservative economic policy in early 1998 did not necessarily exclude external economic cooperation. Nonetheless, North Korea had to conduct external economic exchanges and cooperation while emphasizing socialism and self-reliance principles in practice. It was reported that Chairman Kim Jong-il spoke on this issue in a speech when he gave field guidance to the Ahprokgang Tire Factory in Manpo city, Jagang Province (22 October 1998), "In order to deal with the current circumstances, where there are no more socialist markets and all other countries around us are dealing in capitalist trades, we have to manage our enterprises based on socialist principles but in trades, we have to deal with capitalist countries" (*Rodong Shinmun*, 24 October 1998).

This concept became a very important stepping stone in moving toward improved external relations after 2000.

(3) *The Economic Policy in the Enactment of the National Economic Plan Law.* With the adoption of the National Economic Plan Law at the second meeting of the tenth Supreme People's Assembly in April 1999, new North Korean economic policies were legislated. The basic principle of this law was to prevent any decentralization and liberalization and to stick to national centralized planning, thereby insisting on the traditional socialist economic policy line.¹² This was the legislation of "The Revolutionary Economic Policy of the Party" in

¹² "Our Party would never allow any decentralization and liberalization in the planned management of the economy, and just like the past we would adhere to national centralized and unified guidance from now on" (Report of Yang Hyung-sup, vice-chairman of the standing committee at the Second Session of the Tenth Supreme People's Assembly, dated 7 April 1999).

the late 1990s, to recover from various economic difficulties with socialist principles. In other words, it attempted to strengthen the planned economy without changing the basic principles of economic policy, while at the same time expanding the people's private economic operations because of the practical economic difficulties. The new policy did not reflect North Korea's actual economic conditions at that time. For example, even though in reality since the late 1990s, the private economic sector had continued to grow around the farmers' market, and the individual had appeared as an economic action, the National Economic Plan Law defined only masses such as apparatus, factories, enterprises, or associations as subjects for economic planning. The enlargement of the private economy was the result of economic difficulties and eased people's dissatisfaction with the national structure. However, the North Korean government perceived that the socialist structure could face a crisis if the private economy were legalized and, therefore, repeatedly stressed socialist principles in the National Economic Plan Law (see Table 15-4).

Table 15-4 The Main Contents of the National Economic Plan Law

	Amendment in 1998	National Economic Plan Law in 1999
The principle of a planned economy	A national economy that is a planned economy (article 34)	The same as the amendment (article 2)
The unified guidance of the government	The combination of unified guidance of the government, creativity of subordinate unit, unified control system, and democracy (article 32).	The management of the national economy under centralized and unified guidance (article 3)
The modernization of the economy	Becoming self-reliance, modernization of national economy (article 26)	The modernization of the operation of the national economy (article 8)
Main stress on the producer masses in economic activities	The scientific and rational management of the economy, based on the collective power of the producer masses (article 33)	The fulfillment of a mass line in national economic operation (article 5)
The establishment of the economic plan	The realization of unified and detailed planning and the guarantee of fast and balanced economic development (article 34)	The same as the amendment (article 4, article 7)

Although the National Economic Plan sticks to a socialist planned economy, it did not necessarily create a closed economy but permitted exchanges with the international market economy and even introduced some profit-oriented practical policies in its domestic economy. Examples include (a) the harmony of speed and balance in the economic plan, (b) the recognition of local authority's main

role in local economic planning, (c) the plan that is based on a calculation of objective conditions and profit principles, (d) the guarantee of export-oriented production, and (e) the outcomes of the economic plan to be announced in public, and possibly to other countries. It can be seen that the policy allowed some independence to local economic planning and attached importance to profit and external economic relations.

3. The Continuity and Differences between the July1 Economic Adjustment Measures and Previous Economic Policy Changes

a. Continuity: to Maintain Socialist Principles with Emphasis on Sillyism [Commercialism]

As stated above, North Korean economic policies until the 1990s advanced steadily from a centrally planned socialist economy with collectivism-oriented policy to “achieving the best profits while firmly adhering to socialist principles.”¹³ In other words, it was maintaining the traditional socialist development model. The arguing points related with ‘the best profits’ were whether it would centralize economic policy decision-making or decentralize it, how to realize profit from a self-supporting accounting system, and the extent and pace of economic opening.

As for the first issue, the government leaned toward the direction of decentralized area enlargement under the principle of centralization. It includes decentralization of local authority’s decision-making, creativity buildup in state-owned enterprises’ plan making and accomplishing and so on. The main contents are (1)intensification of the cabinet’s role as economic command, (2)planning power transfer to each related economic guiding authority, (3)rational systematization and management improvement of factory and enterprise, and, (4) differentiation and specialization of production etc.¹⁴ In particular the state budget collecting system was transferred to ‘state budget collecting system classified by sectors’ in which each ministry and administrative department of the cabinet receive their budget directly. Before it was ‘state budget collecting system classified by district’ in which each local people’s committee received the budget, which was controlled by the National Planning Committee. Therefore each ministry and administration can run its own money sources and guide enterprises directly. It intensified the role of the ministry and administration.

¹³ *Minju Chosun* editorial (22 November 2001)

¹⁴ *Chosun Sinbo* (5 August 2000)

Second, after realizing profit in economic operations it proceeded toward the direction of emphasizing making profits based on cost price and a self-supporting account system. Hong Sung-nam, the then prime minister's speech at the fifth meeting of the tenth Supreme People's Assembly revealed the line very well: "Our Party and our country took a epochal measure to improve and intensify economic management to meet natural needs of socialism last year." He explained 'a epochal measure' meant "to increase each local creativity and to carry out a self-supporting account system properly in enterprise management through improvement of work system and methods in all the plan, finances, and labor sectors."¹⁵

Third, the speed and range of the external economic opening of the late 1990s period is different from that of the early 1990s. In the late 1990s, the wariness about foreign capital inducement was intensified while trade relations were enlarged. As we can see in the inactivity of the *Rajin-Sonbong* Zone and the reduction of trade, the open-door policy didn't work well because of the absence of policy and investment by the North Korean government. While, in 1999 Kim Ryong-moon, the then vice minister of trade stated "we will enlarge trades with capitalist blocs and newly establish special economic zones,"¹⁶ the working level officials of the cabinet wanted to enlarge and speed up the external economic opening. But 'The revolutionary economic policy of the Party' was to control its speed and range.

The above three points has been the basic starting point of economic reform. July 1 Economic Adjustment Measures of 2002 is an extension line of the gradual improvement course of previous socialist economic policy since it pursues economic benefits while recovering collectivism.

b. Differences: Reexamining Economic Policies

North Korea reexamined their economic policies around 2000. There were two circumstantial factors. First, the economic reality developed out of control. To carry out collectivism according to socialist principles was in reality very difficult. In economic reality, the situation was continuously bad that in many regions food rations stopped and the rice meant for free distribution was sold for high prices in farmers' market (or black market). And those who didn't receive food distribution and had no purchasing power starved to death or escaped to China.

¹⁵ Radiopress (2000, 6)

¹⁶ *Chosun Sinbo* (15 March 1999)

Second, the inter-Korean summit in June 2000 brought about the easing of tensions on the Korean peninsula. In this atmosphere, North Korea announced an open-door policy line that “we would establish and develop cooperative relations with all the friendly countries that respect sovereignty of the DPRK” (by North Korean foreign ministry, July 15, 2000) and pursued to improve external relations actively.

The circumstantial causes like uncontrolled economic reality and external relations improvement caused the North Korean authority to reexamine its economic policies. The reexamination was felt in the prohibition against wandering for food, the return of the producing mass to working fields and improvement in the will to work, and the enlargement of independent business operations of local and subordinate units by easing national central control. It was also felt in the increase of production factors supply needed for economic development by improving external economic relations on a full scale. This kind of review can be seen to be different from the previous economic policies in the respect that it was an overall review to bring out solutions on practical problems of North Korean economic reality.

B. The Features and Problems of the July 1 Economic Management Reform

1. Price Rationalization and Change to a Uniform Price System: Introduction of a Floating Price System

a. Raise in Price of Consumption Goods and Services: Allow Free Cash Transactions in the Market

The standard for every price adjustment was the price of rice in the farmers’ market. Before the adjustment measure, the state purchasing price of rice from the collectives was 80 chun per 1 kg while the distributing price of rice to urban consumers was 8 chun per 1 kg. This distribution price changed little over the fifty-six years since it was set in 1946.¹⁷ The reason was the late leader Kim Il-sung had instructed that “in deciding price, the country should actively separate the prices of commodities from their value and set the price of popular consumer

¹⁷ Until the mid-1980s the state purchasing price of rice was 60 chun per 1 kg (Social Science Publisher 1985. 5).

goods low.”¹⁸

North Korea carried out a policy to guarantee urban workers’ living conditions through a distribution system whose expenses were entirely borne by the nation so it could drive socialist industrialization. However, there was no change in the price level for a long time, and after the 1990s, there was a serious shortage of grain production and supply. The price of rice also jumped, and rice from distribution centers ended up at farmers’ markets or black markets. At one point, the market price of rice was as high as 100 won per 1 kg, so the uniform price had no meaning in practice. While the national distribution system and consumer goods supply system of state-owned shops almost lost their functions, informal sectors, such as farmers’ markets and black markets, expanded rapidly.

Therefore, the adjustment to the price of rice in July 2002 was according to the price at the farmers’ market. The purchasing price from the collective was set at 40 won per 1 kg, and the supply price in urban areas was set at 44 won. In urban areas, people could freely buy rice at distribution centers or markets, and rice was no longer distributed through ration tickets. This measure allowed farmers to deal with state purchases and gave a practical material incentive to farmers while simultaneously lightening the government’s financial burden of having to supply rice. It also freed rice circulation in urban areas.

All other prices for consumer goods and services were adjusted according to the standard of the raised rice price. The average price raise was 25 times higher than the previous uniform prices (*Chosun Ilbo*, 15 October 2002).

In the case of service prices, it was irrelevant to profit from trams, which cost 0.1 won and were operated by the national budget. However, after the price was changed to 2 won, the tram companies could pay wages, maintain the vehicles, purchase fuel, and perform other tasks independently (Kim Yong-sul 2002).

This price-raising measure had two reciprocal features. First, it had the effect of recovering the function of the network of state-owned shops by raising prices of various consumer goods and services and by returning private economic operations in informal sectors such as the farmers’ market to formal sectors. Second, it opened doors to a more active use of the farmers’ market by abolishing the distribution system and allowing commodities and services to be circulated at raised prices in the markets (state-owned and farmers’ market). (See Table 15-5 for adjustments in prices of major goods.)

The changes from July 2002 to 2003 showed those features very well. In the

¹⁸ Kim Il-sung, “About a Few Principles of Socialist Economy,” speech on 1 March 1969 at a meeting of functionaries in the field of economic sectors in Pyongyang, recited in *Economy Dictionary*, p. 5 (published by Social Science Publisher, 1970).

early stages, the North Korean authority concentrated its efforts on recovering the functions of the state-owned shop network by regulating the farmers' market. But in Pyongyang, the farmers' market was expanded to the general consumers' goods market in 2003. Also it was reported that personal shops were set up at the general market.

Table 15-5. The Price Adjustment of Major Goods

Items	Units	The Price Adjustment (Won/Times)			Gap with Farmers' Market (Won/Times)		
		National Price before Adjustment (A)	Standard Price after Adjustment (B)	Raise Rate (B/A, times)	Price of Farmers' Market (C)	Before Adjustment (C/A, times)	After Adjustment (C/B, times)
Rice	1 kg	Sold at 0.08 Purchase at 0.8	Sold at 44 Purchase at 40	550	49.5	618.8	1.1
Corn	1 kg	Sold at 0.07 Purchase at 0.49	Sold at 24 Purchase at 20	343	31.8	454.3	1.3
Soap	1 piece	0.4	20	50	30	75	1.5
Soy Oil	1 kg	1.2	180	150	202.6	168.8	1.1
Coal	1 ton	40–50	1600	32–40			
Electricity	1,000 kW	35	2100	60			
Bus/Tram Fee	1 time	0.1	2	20			
House Rent	Rent per month	0.03% of income	2 won/m ²				

Source: The price of farmers' markets is from the Ministry of Unification (2002); the price change is compiled from various news reports such as *Choson Shinbo*, *Yonhap News*, etc.

b. Denial of Free Cash Transactions of Production Goods: Maintain Socialist Principles in Industrial Production and Establish Exchange Market for Raw Materials

Even the prices of production goods such as machinery, raw materials, and fuel were adjusted, these reform measure wanted to achieve having the state-owned enterprises support themselves through their own sales income. However, in the case of production goods transactions, the government controlled the material supply with the Daean work system, and it established the Socialist Material Exchange Markets for some limited raw materials (except strategic materials), through which the transaction could be made through bank settle-

ment without cash.

The North Korean authorities dominated the supply of material production goods according to socialist principles and prescribed the transactions for production goods among state-owned enterprises. Therefore, production goods could not be sold and bought freely as commodities were in a free market. The features of the economic management improvement measures that related to production goods are as follows. First, North Korea could not convert the operation of industrial production into market economic operations. Second, in a “supply shortage” when the country could not supply all the production goods, North Korea allowed exchange markets so some items of limited production goods were supplied to enterprises and so some flexibility was given to the production operations of those enterprises.

c. Enforce Floating Price System

The state-decided price in the price-raising measures was no longer the uniform price but a standard price or floating price. This flexibility allowed producers and consumers to set prices independently, according to internal supply and demand. Even the standard price of popular consumer goods could be set at a high level if the supply was low. The government managed the controls on the fluctuations in prices, and the range of difference in prices was 5–10 percent (Kim Yong-sul 2002). This flexibility was a very significant change in North Korea’s price system because it led to a fixed price system in which the government decided the price, except for changes in the farmers’ market prices. It should be pointed out that this shift did not signify that North Korea was allowing a transformation into a free market price system or that the changes were made under national guidance and management.

Comparing North Korean price system changes with the changes in China’s policy of the 1980s clearly reveals certain features. In carrying out its price liberalization policy, China took advantage of a market economy in the 1980s. In November 1979, China raised the purchasing price of eighteen major agricultural and livestock products such as grains and vegetables by 24.8 percent. At the same time, China started its reform and liberalization policy. The price of 160 products and then 350 products, in 1982 and 1983, respectively, were transferred to market prices that had been decided by each enterprise according to market demand. After 1985, China implemented a dual price system on major production goods—the national unified distribution price and the market price co-existed—so it could revitalize the market by increasing the enterprises’ will to produce. This price liberalization policy of China sought to reform and reduce the materials management system. The number of materials produced through

central planning was reduced to 50 types in 1988 from 316 types in 1979. Thus, the percentage of centrally planned production in total industrial production was sharply reduced to 16.2 percent in 1988 from 80 percent in 1984 (Maruyama 1991, p. 5).

Also, the number of national unified distribution materials in supply was reduced to 27 types in 1989 from 256 types in 1979. In the national unified distribution rate of major materials, that of steel products was reduced to 30.8 percent in 1990 from 77.1 percent in 1979. During that same period, the national distribution rate of coal was reduced to 42.1 percent from 58.9 percent and that of cement from 35.7 percent to 10.3 percent. In 1992, the rate of market sales between producers and users of production goods was higher than 80 percent of total production goods sales (Finance and Material Economy Institute in Chinese Academy of Social Science 1993, p. 3).

The price reform of China in the 1980s was meant to create various price systems within one framework, such as a market price and a combination price between planned and free market. In other words, price reform was made to include four different kinds of price systems: state price, floating price, negotiated price, and market price.¹⁹ Factors such as cost of production, demand, and supply had the priority in those price decisions, and the function of free price in the market was intensified. In 1992, China abolished the dual price system and carried out price liberalization measures that were based on a completely market-oriented price system. (For changes in the Chinese market prices, see Table 15-6.)

Table 15-6. The Changes in Market Price Functions in Each Product Categories in China

(unit: %)

Classification	1978	1987	1991	1993
Consumption Goods	3.0	38.3	68.8	93.8
Agriculture By-Products	5.6	53.8	57.8	87.5
Production Goods	3.0		45.7	81.1

Source: China Price Yearbook.

North Korea's price adjustment was similar to China's reform to the point

¹⁹ Floating price is the price that each enterprise decides independently between the maximum and the minimum of the state's standard price. Negotiated price is similar to market price in that the price is determined according to supply and demand, but it is different in that some prices are determined by market institutions and others by the authorities.

that it factored in elements such as cost of production, demand, and supply. North Korea was different because it continued to regulate the function of the market price. In the price system of North Korea, state-fixed prices and floating prices have priority.

The course of China's price reform was clearly moving from a planned fixed price to a floating price (standard price) and ultimately to a market price. Nonetheless, North Korea's price reform is still moving from a planned, fixed-price system to a floating price system.

In conclusion, North Korea's price adjustment measures are similar to the early stages of China's price reform in the readjustment of product price and in changes to the price management system. However, the reform centers on a planned price, unlike China's focus on a market price.

2. Wage Rationalization and Social Security System Adjustment

a. Transforming the Government's Financial Burden into Wages

A distinctive aspect of wage raises in the July 1 Reform is that the governmental expenditure allotment was transformed into a wage system. According to *Choson Shinbo*, average living expenses for a family in Pyongyang were about 5,000 won per month, when converted into the real cost of living. Before the wage raise, wages for both husband and wife were only 200 won, or 4 percent of the average living expenses. The rest was supplemented by the government through distribution, and social security (*Choson Sinbo*, 9 October 2002). The problem was that governmental expenditure was sometimes paralyzed in different regions and classes; workers could suffer starvation when they did not receive proper benefits from the government. The North Korean government fundamentally changed its socialist distribution and social security system to overcome such problems. While maintaining a basic social security system with free medical care, free education, and social security for honored soldiers, the government expenditure excluded food distribution, rent, and water. Instead, such costs were reflected in wage increases so that people could pay for their food and social services expenses from their raised wages.

b. Equalizing Wages and Inspiring the Will to Work

Another feature of the wage raise was the lack of wage equalization. First, all wages were raised differently—between 15 and 20 times higher—according to occupation. For industrial workers, the average wage increase was to 2,000 won per month from 110 won per month, 18 times higher. The wage increase for

heavy workers, scientists, technicians, and educators was relatively high, reflecting the North Korean government policy's priority on the various economic sectors. For example, the wage of mine workers was raised by twenty times, from 300 won per month to 6,000 won per month.²⁰

Second, the new wage system did not have to be paid in full but was a "standard wage" that could be paid "according to the amount of work." In the past, a worker could receive at least 60 percent of his or her wage even if the worker did not participate in the production operations. This equalized wage system gave rise to the notion that one could receive wages without working. However, after the wage increase, if a factory did not operate and if there was no sales profit, no wages were paid; if people did extra work and made more profit, they received more wages.²¹ In other words, by increasing material incentives, the policies were changed toward doing away with equalization of distribution and intensifying the will to produce.

To interweave the wage system with the enterprise incomes, the *Bun Suip* (achieved income) index was introduced to substitute for the "production index" in enterprise operation. *Bun Suip* is "composed of the remaining cost after deduction of production cost, excluding wages, from the total income earned by selling the products of an enterprise." (Lee Young-keun 2003, 38.) In other words, it is the amount left from total income after deducting raw materials cost, fuel and energy cost, depreciation cost, and administrative cost. The remainder includes workers' wages, tax on profit, and enterprise profits. To put it another way, *Bun Suip* is the sum of profits excluding the prime cost, or cost of production and sale, from an enterprise's total income and wages. It is a new concept that recognizes wages as revenue and not as cost.

In a collective farm, where the property system is not state-owned but collectively owned, "the collective net income" includes the labor cost of farmers, and the members of the collective are paid with the net income. The *Bun Suip* concept can be seen as being similar to an income accounting system applied to a collective farm. The *Bun Suip* system, apparently, "directly regulates the interests of labor because the laborer's share and political evaluation are provided

²⁰ Mr. and Mrs. Jimura, North Korean abduction victims who returned to Japan, reported, "It was so difficult during the food crisis between 1997 and 1998. Now the distribution system is open, and money can buy anything. At the present, the government paid 4,200 won of living expenses per month to us." (*Asahi Shinmun*, 17 October 2002).

²¹ According to *Choson Shinbo*, the basic wage of 2.8 *Chikdong Chongnyun* mine workers was 370 won a month, and with excess achievement, the average wage was 1,300 won in the late 1990s, during the "Arduous March" period when the price of rice was 130 won per 1 kilogram. At present, they receive 30,000 won a month on average and a maximum of 60,000 won for excess work (*Choson Shinbo*, 11 October 2002).

according to the *Bun Suip*” (Lee Young-keun 2003, 39). From this explanation, we can understand that in a system that interlocks wages and sales income, a worker’s wage is evaluated according to the sales income. Also it was claimed that “those who worked more could receive more share of material benefits and were due better political evaluation” by factoring the results of a worker’s labor into the political evaluation (Lee Ki-ban 2003, 20). Thereby, both political advancement, such as party membership and promotions, and material rewards were given as incentives to increase the worker’s will to work.

Comparing North Korea’s adjustments of its wage system with China’s wage reform in the 1980s, we can see North Korea’s policy line clearly moving away from equalization.

China carried out wage reform in the early stages of its economic reform, with the following changes (Kuribayashi 1998, 144–45). First, the Chinese government introduced a wage apportionment system whereby the government controlled the total sum of wages but allowed significant independence in apportioning wages to the local authorities and enterprises.

Second, the government introduced market mechanisms to wage management. In 1985, it introduced a “Wage-Productivity Linking System” (State Department of China 1985, 1986) that attached importance to a proportional relationship between the productivity of labor and the sum total of wages. For example, if the productivity, profit rate, or tax payment rate of enterprises increases by 1 percent, wages should be increased by a ratio of 0.3–0.7 percent so that all due consideration is given to the country, enterprise, and workers.

Table 15-7. A Ratio Between the Average Wage Increase, GNP, and the Labor Productivity (Increasing Rate of the Annual Mean)

(unit: %)

Year	GNP Growth Rate	The Productivity of Labor (A)	The Average Wage Increase (B)	(B/A)
1978–1980	5.1	5.2	6.4	1.23
1981–1985	10.7	6.6	4.2	0.64
1986–1990	7.9	4.9	2.4	0.49
1991–1995	11.8	8.4	5.9	0.70
1978–1995	9.8	6.6	4.3	0.65

Source: *China Labor Statistics Yearbook*, 1996; *China Statistics Yearbook*, 1997.

In the early stage of economic reform, wage increases exceeded the productivity of labor in China; however, after the 1980s, the increase in productivity was higher than the rate of wage increase as shown in Table 15-7.

The North Korean *Bun Suip* wage determination index system is similar to

the wage-productivity linking policy of China in the 1980s. No statistical data are yet available to determine whether the North Korean reform resulted in improved productivity, but China's economy clearly showed a sharp increase in productivity after introducing the new system.

3. Enterprise Management System Adjustments

a. Strengthening of Operational Independence

As we have already seen, since July 2002, the system of evaluation according to *Bun Suip* was implemented to expand the self-supporting accounting system. The significance of this change is that whereas in the past, actual production records were the basis and sales were secondary, now with the changes, the actual sales record became more important and, therefore, it became more important to produce saleable goods, which would reduce the cost of production and increase profitability (Lee Young-keun 2003, p. 39). The Amendment of 1998 introduced new articles such as “carrying out a self-supporting account system (Article 33)” and “considering economic levers like the cost of production, price, and profitability in economic management (Article 33).” Those measures were realized in the July 1 Reform.

Also, whereas in the past, the government's production goods were supplied to the enterprises according to a unified system directed by the Materials Supply Committee of the Cabinet, now the reform made each enterprise independently responsible for the sale and purchase of materials so that the enterprises could operate with profit as the highest priority.

b. Maintaining the Dae'an Work System: No Separation of Ownership and Management

North Korea's measure to strengthen the enterprise's management independence was undertaken to intensify self-control of production plans and sales and to provide wage incentives that are based on sales records and will increase management efficiency. One criticism might be that this change was nothing more than transforming the government's central planning into state guidance within the frame of state-owned enterprise. Separating the right of management from the right of ownership in socialist business management—where the means of production are state-owned—depends on whether a manager is truly responsible for the management or whether a collective guidance according to the factory party committee's guidance is responsible for management.

Comparing the independence of enterprise management in North Korea with

that in China, we can find the following characteristics of the North Korean policy. In China's enterprise reform before 1984, the early stages of economic reform aimed to increase management efficiency by decentralizing management rights. In other words, it was a material incentive-oriented policy that increased workers' income while allowing enterprises to achieve more profit. It was called an "industrial economic liability system," and the profit that remained after paying the money due to the government was distributed independently within the enterprise. As of late August 1981, more than 65 percent of all state-owned enterprises in the whole country carried out the industrial economic liability system.

Enterprise reform in China was carried out full scale in the mid-1980s. The main points of the reform were the acceleration of decentralization, tax reform, and the factory manager liability system. First, to increase the development of state-owned enterprises, which were showing slower advances than non-state-owned enterprises, China reduced centralized planning and increased independent management. Independent management included the right to determine prices, the right to sell products, the right to purchase production materials, the right to apply funds, the right to wage and bonus payment, the right to cooperative management with other enterprises, and the right to technical renovation.

The methods of exchanging materials among productive enterprises in China were especially varied. First, instead of a distribution system, various methods—including open sales of a designated amount of supply, supply according to demand and production, and contractual demand to the distributor—were applied and in Sichuan, Shanghai, a production goods market was established. By thus allowing consumers to choose goods freely, the fluidity of production goods was promoted. The enterprise management adjustments of North Korea went in this direction but still are not at the level of decentralization of China.

Second, China reformed profit payments due to the government by a state-owned enterprise (payment became a profit tax) and carried out full-scale market-oriented reforms.

Third, a "property contract management liability system" that separated ownership and management of state-owned enterprise was carried out. By the second quarter of 1987, 90 percent of all state-owned enterprises in China had accomplished this measure. The "factory manager liability system" assisted the contract management system. It reformed the previous policy, in which the Factory Party Committee was the center of management, into a system in which a factory manager took full responsibility. Thereby, politics and enterprise management were separated.

Compared with China's reforms, the North Korean adjustment measures were mostly similar to the stage of China's enterprise reform before 1984. However,

the decentralization measures were similar to China's reform measures after 1984 in some points. A combination of tax reform and the factory manager liability system has yet to be introduced in North Korea. Also, the socialist material exchange market of North Korea is similar to the production goods market of China, although in North Korea there has yet to be a full-scale application of market principles that will allow consumers to choose goods freely and whereby the price is determined by the market and the cash transactions are made freely in the market. (See Table 15-8 for a comparison of reforms in China and North Korea.)

In this regard, strengthening the independence of enterprise management in North Korea did not proceed to the stage of market-oriented and independent management. While the independence of enterprises was strengthened, ownership and management were not separated.

Table 15-8. Comparison of China's Reform and Opening Measures and North Korean Economic Management Adjustment Measures

Classification		China	North Korea
General Economy		<ul style="list-style-type: none"> - Adopting reform and opening policy line (December 1978) - Starting economic reform in urban areas (October 1984) - Legalizing private economy (March 1988) - Adopting a socialist market economy policy line (October 1992) 	- "Utilitarian Socialism" policy line (2000)
Microeconomic Sectors	Agricultural Sector	<ul style="list-style-type: none"> - Introducing farm family contract production system (1978) - Deciding to dismantle the people's commune (April 1982) - Introducing the contract purchasing system (1985) - Abolishing the agricultural products distribution system (March 1993) 	- Maintaining the collective farm
	State-Owned Enterprise Sector	<ul style="list-style-type: none"> - Introducing a profit-holding system (1979) - Introducing the profit tax (June 1983) - Introducing factory manager liability system (June 1984) - Carrying out contract management liability system (1987) 	<ul style="list-style-type: none"> - Intensifying a self-supporting account system (depreciation cost reservation) - Enlarging independence of enterprise

Table 15-8. (Continued)

Classification		China	North Korea
Macroeconomic Sectors		<ul style="list-style-type: none"> - Enacting corporation management provisions (July 1992) - Approving the introduction of state-owned enterprise's stocks system (November 1997) 	
	Price Reform	<ul style="list-style-type: none"> - Raising the purchasing price of agricultural products (1978) - Introducing a mixed-price system (1979) - Introducing the dual-price system (1985) - Liberalizing grain prices (1992) 	<ul style="list-style-type: none"> - Raising the purchasing price of agricultural products - Raising prices and wages
	Financial Reform	<ul style="list-style-type: none"> - Introducing the contract finance system (February 1980) - Introducing divided tax (January 1994) 	- Carrying out state budget collecting system classified by sectors
External Economic Sectors	Banking Reform	<ul style="list-style-type: none"> - Separating commercial bank functions from central bank (October 1983) - Joining IMF (March 1980), and IBRD (May 1980) - Beginning to issue corporate bonds (1984) - Opening call markets among banks and commercial paper discount market (January 1985) - Opening Shanghai stock exchange (December 1990) 	
	Trade Management	<ul style="list-style-type: none"> - Introducing the export tariffs (December 1980) - Carrying out the contract external trade management system (February 1988) - Abolishing the export subsidy system (January 1991) 	- Unifying production and trade
	Foreign Currency Management	<ul style="list-style-type: none"> - Introducing convertible notes (March 1980) - Introducing the inner exchange rate (January 1981) - Abolishing the inner exchange rate (January 1985) 	- Abolishing convertible notes

Table 15-8. (Continued)

Classification	China	North Korea
	<ul style="list-style-type: none"> - Establishing the foreign currency coordination center (November 1985) - Introducing the managed floating exchange rate (April 1991) - Introducing the unified floating exchange rate (January 1994) - Abolishing convertible notes (January 1994) 	
External Opening	<ul style="list-style-type: none"> - Establishing a special economic zone (August 1980, October 1980) - Opening 14 cities in coastal area (May 1984) - Establishing the open economic zone in coastal areas (February 1985) - Opening the coastal area in the <i>Bohai</i> rim region (March 1988) - Announcing the Shanghai <i>Pudong</i> region development (April 1990) 	<ul style="list-style-type: none"> - Establishing the <i>Rajin-Sonbong</i> Free Economic Trade Zone (December 1991) - Establishing the <i>Sinuiju</i> Special Administrative Region (September 2002)

Source: Compiled from various media reports.

C. The Positive Aspects and Problems of North Korea's Recent Economic Policies

As previously discussed, the July 1 Economic Reform has various features such as decentralization of the planned economy, normalization of price functions, maintenance of purchasing power through wage rationalization, and enlargement of enterprise management independence. Those features signify that North Korea's recent economic policy is moving toward adopting a market economy's efficiency while maintaining the guiding principles of a planned economy. In other words, North Korea is not embracing a market-oriented economic reform policy at present but is at the stage of reforming a planned economy into a guided economy. Even the reform of the rationed distribution economy into a currency economy is being carried out within a "guided" economy. The recent economic management adjustment measures of North Korea are similar to the early 1980s reform measures of China. But in its combined collective and enterprise management system, North Korea maintains that its *Uri sik* (our own style)

of collective management system is different from that of China.

Regarding agricultural management reform, there is little information to use for a specific analysis but clearly there is no movement to dismantle the collective. There have been some news reports that a land rent system has been newly introduced in collective farms in certain areas. However, it has not been confirmed whether there have been changes in the land ownership system.

No clear evidence exists that the North Korean economic reality has improved during 2003. Even after the rationalization of prices and wages, a chronic supply shortage persists. After the July 1 reform, prices continued to increase, with the price of rice hitting 60 won per kg and rising again to 140 won—from 44 won (Kim Kyung-il 2003, p. 8). One newspaper even reported that in some areas, prices are jumping even higher (*Joongang Ilbo*, 5 December 2002). The dollar exchange rate was set at about 150 won to the U.S. dollar, but the actual market exchange rate was 350 won in October 2002, and 600 won in January 2003. And since June 2003, the won has devalued to about 800–900 won to the U.S. dollar (Kim Kyung-il 2003, p. 8). This devaluation is seen as a result of the mass circulation of currency according to the rationalization of prices and wages. As the prices in farmers' markets increased, more goods and commodities made their way into the farmers' market.

In March 2003, the farmers' market was transformed into a general consumption goods market where not only agricultural products but also industrial consumption goods could be traded. This change was the result of policy changes that actively approved market functions because the economic reality had moved away from the policy aimed at normalizing state-owned shop networks—despite the July 1 Reform. This measure was very significant in that it was the first systemized measure to approve market functions. However, the “market” meant only the consumer goods market. It did not include any measures to transform the production goods market or the “socialist material exchange market” into a free market. However, North Korea certainly is moving toward the co-existence of a planned and a free market. The pace of transformation depends largely on political stability and external relations stability. The systemization and revitalization of market functions will lead to the gradual replacement of the state-owned shop network by the general market and to the co-existence of the planned and free market systems.

1. Positive Aspects

- North Korea has been continuously pushing for economic improvement measures, even during its nuclear crisis of October 2002. A series of measures such as transforming the farmers' market into a general market, and absorbing

money supplies by issuing public loans and preparing finances shows that North Korea has already taken on a more pragmatic attitude toward its economic policies.

- As a wage system was introduced that distinguished the quality and the quantity of labor, workers gained a more competitive mindset.
- Enterprises began to focus on producing sellable products as the self-supporting accounting system was intensified and as independent management was strengthened, through the decentralization of economic management.
- Those changes brought about the general situation that people (farmers and workers) should work very hard.

2. Remaining Problems

- Although the radical rise in prices and the strengthening of the currency took place, the production conditions of enterprises are still in difficult straits because fundamental problems such as shortages of materials and energy have not been solved. Factory operation rates are still very low because of the supply shortage, and workers are not receiving payments because their wages depend on sales income and not on output.

- Prices in farmers' markets in some regions rose dramatically as a result of a failure in the coordination of supply and demand.

- Without any long-term economic plans, the independence of enterprises could lead to negative effects such as unplanned production, abuse of resources, and overdependence on the business capacity of managers.

- In enterprise management, there is still no separation between the party and the enterprise.

Overall, we can see that North Korea is finally beginning to consider that a socialist planned economy and free market functions can work together, and it is carrying out policies based on such an understanding.

D. Conclusion

Even in capitalist economic theories, the free market theory and the government intervention theory are traditionally at odds. Most people think that an appropriate balance of coordination by the government—centered on the independent growth of the market—is necessary. North Korea is already in the stages of transforming its economic policy from a state-planned economy into a state-coordinated economy. The next step would be to introduce socialist market economic policies. To do so, additional reforms related to banking, finances, taxation, trade, and foreign currency must be introduced and implemented.

However, it seems that North Korea is insisting on a *Uri sik* reform and on transforming into a guided economy that is similar to China's reform and liberalization policy in some ways but very different in others. The concepts behind the present measures for economic management improvement by North Korea are similar to the early stages of China's economic reform measures. North Korea assumes that "a guided economy can be the main economic policy, supplemented by market coordination functions" (The Central Committee of Chinese Communist Party, 1984). However, a full introduction of market mechanisms—where "the government regulates the market and the market leads the enterprises," such as China has carried out since 1987—has yet to appear in North Korea. The government is instead allowing market mechanisms only in SEZs such as the Sinuiju Special Administrative Region. It remains to be seen how North Korea will work out its combination of *Uri sik* utilitarian socialism and a market-oriented economic system.

References

- Asahi Shinmun* (Tokyo). 17 October 2002.
- Bang Yong-duk. "The New *Chollima* Movement Is the Revolutionary Marching Campaign for the Great Victory of Our Own Style Socialist Works." *Keunroja* (Workers). Central Committee of Workers' Party, Vol. 8. Pyongyang, 1998.
- China Labor Statistics Yearbook*. 1996. Beijing.
- China Prices Yearbook*. Beijing, respective annual editions.
- China Statistics Yearbook*. 1997. Beijing.
- Choson Shinbo*. 5 August 2000.
- _____. 9 October 2002.
- _____. 11 October 2002.
- Chosun Ilbo*. Section NK Report, 16 October 2002. Internet edition. Seoul.
- Communist Party of China Central Committee. "The Party's Decision on Economic Structure Reform." Speech on 20 October 1984 at the twelfth Meeting of the Communist Party of China Central Committee.
- East Asia Trade Research Board. 1997. *East Asia Economy Information*. October. Tokyo.
- Far East Asia Affairs Institute ed. 1988. *The Reform and Opening, Collection of China's Major Papers*. Beijing.
- Finance and Material Economy Institute in Chinese Academy of Social Science. 1993. *Empowerment and Complement of Chinese Developing Market*. Beijing: Chinese Academy of Social Science.

Joongang Ilbo. Seoul. 2 August 2002.

_____. 5 December 2002. Seoul.

Kim Il-sung. "About Attaching Importance to Five Battle Lines of Socialist Construction." Speech on 19 August 1983 at a meeting of functionaries in the field of economic sectors. Pyongyang.

_____. "About a Few Principles of Socialist Economy." Speech on 1 March 1969 at a meeting of functionaries in the field of economic sectors. Pyongyang.

Kim, Kyung-il. 26 June 2003. "The Meanings and Future of Economic Management Improvement Measures of North Korea." Paper presented at Korea University's International Conference on the Evaluation and Future of July 1 Economic Management Improvement Measures. Seoul.

Kim Yong-sul. "About Economic Policies of North Korea." Speech on 2 September 2002 at a seminar of the Korea Economic Exchange Association, Tokyo.

Korean Central News Agency. 10 June 2003. Pyongyang.

KOTRA (Korea Trade-Investment Promotion Agency). *The Changes in North Korean External Trades*. Seoul: KOTRA. Each year's edition.

Kuribayashi Sumio ed. 1998. *The Possibility of Sustainable Development in China*. Tokyo.

Lee Chan-woo. 2000. "The Foreign Capital Inducement Policy and Present Conditions of North Korea." *North Korea News Letter*. Seoul.

Lee Ki-ban. 2003. "To Realize Socialist Distribution Principle Precisely Is the Main Request of Achieving Economic Management Improvement." *Economy Study*, Vol. 2, pp. 19–21. Pyongyang: Korea Science & Encyclopedia Publishing House.

Lee Young-keun. 2003. "How to Increase *Bun Suip* in Enterprise Economic Operations." *Economy Study*. Pyongyang. no 1.

Maruyama, Nobuo ed. 1991. *Industrialization of China and Its Fluctuating Market-Oriented Line*. Tokyo: Institute of Developing Economies.

Ministry of Unification. 2002. *The Report on North Korean Price Changes in 2001*. Seoul: Ministry of Unification.

Minju Choson. 22 November 2001. "The Seed to Improve and Complete Socialist Economic Management." Pyongyang

Park Song-bong. 2002. "The Party's Revolutionary Economic Policy Is the Banner of Building a Powerful Socialist Country." *Keunroja* (Workers), Pyongyang: Central Committee of Workers' Party Vol. 3, p. 45–48.

Radiopress, Inc. 2000. *Policy Trends in North Korea*. Vol. 5. Tokyo.

Rodong Shinmun. 22 August 1998. Pyongyang

_____. 3 October 2000. "We Will Never Forget: Opening Chairman Kim Jong-il's 'the Arduous March' Revolutionary History."

- Social Science Publisher of North Korea. 1970. *Economy Dictionary*. Pyongyang.
- _____. 1985a. *Economy Dictionary*. Pyongyang.
- _____. 1985b. *The Experience of Improving People's Lives*. Pyongyang.
- _____. 1996. *The Ideological Principles of the Great Leader Comrade Kim Jong-il: Economics 1–4*. Pyongyang.
- State Department of China. 1985. *The Full Understanding of State Department on the Issue of Wage Reform in State-Owned Enterprise*. Beijing: State Department of China.
- _____. 1986. *Carrying out the System to Link the Total Amount of Wage, Tax Payment, Profit in Middle-Size and Large-Size State-Owned Enterprise*. Beijing: State Department of China.

Chapter 16

Prospects and Future Tasks of the July 1 Economic Reform

A. Several Things to Consider

Before predicting the direction of the North Korean economic reform and presenting any pertinent tasks of the country, we must ponder whether immediate reform measures to recover from the current economic suffering should be divergent or convergent with general long-term reform measures when developing an economic system.

If any of these two options should be carried out first exclusively or if the contents of both measures are significantly different from each other, we must then examine the methods and the possibility of success of the current economic recovery measures before we predict the direction for economic reform. Of course, the North Korean leadership will set economic recovery as its priority to ease the present economic austerity but will try to maintain a socialist planned economy.

However, given the situation that North Korea currently faces, combined with its recent economic measures, new reforms cannot be successful without adopting some market economic factors—regardless of the leaders' intention of maintaining a socialist planned economy. In short, North Korean leaders will make efforts to implement measures for an immediate economic recovery while they stick to a planned economy and exclude the market economic factors. But, in reality, they will soon realize that their nation is ultimately heading for a market economy—a direction they will not expect.

Even so, North Korea will not adopt a radical model of the market economy that will deconstruct its existing socialist frame of economic management. Because it is highly unlikely that the currently solid political system led by Kim

Jong-il will collapse from below, any economic reform will be engineered in a top-down manner by the existing political elites. In other words, the measures for economic recovery will gradually, not drastically, introduce market economic factors and those inroads will bring about fundamental change.¹

Therefore, to forecast the course of North Korean economic reform, we must keep several things in mind. First, although the short-term purpose of the July 1 Economic Reform is to normalize and revive the nation's economy, it can lead—in the long term—to a fundamental change of the existing socialist economic system.²

Second, measures to improve the North Korean economy should not be treated as one package but should be analyzed after proper categorization. Dividing the economic measures into several categories will facilitate accurate analysis. The measures should be divided according to an economic strategy, an economic management system of the economic policy, and a fundamental set of socialist economic principles.³

Last but not least, North Korea needs a favorable international environment to improve its economy. Although North Korea can take measures to improve the economy on its own and can consent to the possibility of fundamental economic reform, it cannot be successful without satisfying the necessary condition of support from abroad.⁴

Therefore, to efficiently improve the North Korean economy, Pyongyang must have the will to change its economic system and, accordingly, to create concrete political measures. It is essential for the government to carry out such measures, and good foreign relations are equally important. To actualize the

¹ For example, various programs for economic reform since the 1990s, such as the July 1 Economic Reform and the special economic zones (SEZs) in Sinuiju, Mt. Kumgang, and Kaesong were launched to gain the benefits of economic recovery and economic development with an empty slogan of keeping the frame of socialism.

² For arguments regarding North Korean models for economic transition in the comparative socialist view, refer to Kim Seong-cheol et al., (2001).

³ The following are major issues that will be covered in the different categories involving North Korean economic improvement. First, as for economic policy, issues regarding accumulation measures and directions of foreign economic policy and munitions industry will be included. Second, for the economic management system, issues will include improvement and supplementation of a planned economy, adjustment of the economic system under the political ideology, and enhancement of economic institutions. Finally, the socialist economic principle, the expansion of the market pricing system or ownership modification, the price-setting function, and other issues such as finance and the exchange rate will be included. This chapter cannot cover all those issues, but it is important to keep them in mind.

⁴ In fact, one of the main reasons for the failure of the Rajin–Sonbong SEZ lies in North Korea's problematic foreign relations, which worsened when the nation's nuclear weapons program came to light in 1992.

various methods of economic reform, the government must simultaneously consider relevant prerequisites within the North Korean system, as well as international relations including those with South Korea, that can sustain the reform.

B. Meaning of the July 1 Economic Reform and the Key to Success

1. First Step Toward a Market Economy

The July 1 Economic Reform aims at (a) recognizing farmers' market prices, (b) decentralizing the planned economic system, (c) expanding markets, (d) nurturing entrepreneurship to improve corporate profitability, and (e) encouraging the financial independence of households. The measures reflect the North Korean government's intent to distribute resources effectively, which is a strong point of the market economy, while it continues to exert its price-setting function so it will not give an impression of moving toward a market economy.⁵ North Korea strongly insists that it will continue to stick to the system in which the government alone decides the prices and supplies state-run shops with goods. By doing so, the government attempts to redress some side effects of the planned economy while preserving its socialist framework. Of course, it will take time for North Koreans to get accustomed to the measure because this is a new attempt by the government. They have experienced the private economy in the form of a black market, but they have never experienced price normalization. Unlike North Korea, China was able to easily adjust to economic reform because the nation had experienced a market economy before communism.

Price normalization is a prerequisite of a market operation. Thus, this pricing reform can be considered as an attempt to take a step closer to the market economy. A drastic rise in wages is an inevitable move to secure the cost of living and the buying power of the people. That rise is believed to be a basic condition that will shift the nation's economic system into a monetary economy.⁶ However, it is important to note that economic recovery measures cannot be successful without allowing market economic factors, regardless of the government's intention. Therefore, whether this measure is considered as a first step or as a preparation toward a market economy, the measure could lead to unintended consequences. Indeed, the measure itself is strongly friendly to a

⁵ The North Korean Economy Research Team of Bank of Korea (2002).

⁶ The Northeastern Asia Team of Federation of Korean Industries (2002).

market economy. Because of this characteristic, the measure has an irreversible effect.

Measures for economic reform to revive the North Korean economy should go along with the economic open-door policy. If the government is to successfully carry out the July 1 Reform while maintaining the security of the Pyongyang regime, it is crucial to promote an economic recovery that also mobilizes foreign resources. In other words, North Korea should consolidate the grounds for its economic system through a series of reform measures and should actively push ahead with a policy to open the nation's doors. The limited effects of previous open-door policies such as Hapyoungbup (joint venture law) in the 1980s and the establishment of the Rajin-Sonbong special economic zone (SEZ), which was compared to putting up a mosquito net in an isolated region, show that these efforts were not fruitful. On the contrary, the Sinuiju SEZ, the Mt. Kumgang special tourist zone, and the Kaesong SEZ, which were designated on the heels of the July 1 reforms, can be likened to a "laboratory" opening, if we depart from the mosquito net opening in the past. The Rajin-Sonbong SEZ, in particular, played a limited role in eliminating the negative effects of a planned economy. But the North Korean government gave the Sinuiju SEZ both a laboratory and much room for discretion and intends to evaluate the SEZ's success according to its results. Although there may be some differences in the case of the Mt. Kumgang special tourist zone and the Kaesong SEZ, the government's intention is identical. It is important to notice that the four special zones, including the Rajin-Sonbong SEZ, are all on the outer edges of North Korean territory. Because of their location, the special zones may have little short-term influence on the center of North Korea. Nonetheless, as time goes by, each zone can expand to the point where it can exercise a huge influencing power, which could surround the whole nation. This development is also irreversible.

2. Keys to Success in the Future

Although North Korea admitted to the accumulated failures of its planned economy and the limitations of its existing reform measures when it enacted the July 1 Economic Reform and opened the nation, the measures still have limitations and problems. Therefore, numerous obstacles must be overcome before the measures can successfully take effect and lead to economic reform in a real sense.

a. Overcoming the Limitations of the Provisional Reform

Because the July 1 Economic Reform is provisional in its nature, the perti-

nent limitation should be defeated. The success of the reform lies in keeping a balance of demand and supply. However, that balance is hard to achieve with the existing North Korean infrastructure. To produce significant economic accomplishments, the government should do more than launch and preach a system reform. If the government is to enhance supply capacity, it is essential to improve the price elasticity of supply by putting in more production factors such as capital, labor, and skill. Despite the July 1 Reform, North Korea's facility operation rate is likely to remain flat. Thanks to the measures, some local industries and consumption goods industries might improve productivity. But overall deficiency in raw material and energy, plus the limits on the investment policy, will make it difficult to improve the facility operation rate.⁷ The low rate of facility operation will disrupt the labor division system; people should expect quite a long time before the intermediate market for products such as parts can be activated.⁸

If North Korea cannot escape from poverty because of its internal structural problems and because its economic growth does not function any more, social disruption and price instability caused by a supply shortage are expected to take place. North Korea cannot easily borrow money from international financial agencies because of its negative credit rating and current nuclear impasse. Therefore, there is a risk of social disruptions such as high inflation, market cornering, expansion of an underground economy, corruption, and so on. Distribution according to one's profitability and a new pricing system will create an income gap among factory workers according to different productivity levels, as well as a gap between factory workers and farmers according to changing relative prices.⁹ These gaps will lead to an eventual destruction of uniformity, a long-lasting tradition of a socialist country, and to the ideological grounds of equality. In this regard, North Korea will need a new principle for social integration to redress social cleavage, as the new problem of an income gap begins to loom large.

Although the government has intended to balance demand and supply, a short supply in the real economy has triggered imbalance. The problem will not be

⁷ A former procurement section manager at an associated company, who defected from North Korea in the early 2003, said that from August to October 2002, the North Korean government raised wages to workers in the form of loans to companies. However, after November, those companies had to pay back the money and make the payroll to their employees on their own, which they were unable to do because production was not fully normalized.

⁸ Kim Yeon-cheol (2002).

⁹ The North Korean people's average monthly wages are 2,000–3,000 won, but there are some farms in AnAk gun, South Hwanghae Province, where a family is paid more than 300,000 won per year (*Choson Shinbo*, 22 April 2003).

rectified in the near future despite the government's price adjustment initiative. In addition, the gap between the price set by the government and that set by the black market will not disappear. The black market price, which has been stabilized for a couple of years, is likely to increase, which will press the government to continually readjust its price. As the income gap widens, inflation can stir up public fear. According to an official announcement, after North Korea embarked on this measure, the price of rice went up to 95 won per 1 kg from 50–60 won per 1 kg, and the rice price in the market in Sinuiju of North Pyongan Province almost tripled, to 155 won.¹⁰

Because underdeveloped nations such as North Korea need foreign capital for economic development, the North has to streamline its system to attract investors. Although it is still being adjusted by the North Korean trade deputy minister, Kim Yong-sul, and has not yet been announced officially, a new development of joint business expansion initiatives is taking place in North Korea. Foreign companies can hold more than 50 percent of the total shares of a company. For example, in a recent joint business project, a Singaporean company held 70–80 percent of the shares of a North Korean company.¹¹ Despite such initiatives, however, North Korea has to make or adjust laws to openly attract foreign capital.

b. Encouraging People to Change Their Mindset toward a Market Economy

The July 1 Economic Reform may have prompted the North Korean people to have a more materialistic mindset. However, because North Koreans have long been under the effects of an ideological stimulation by the government, such as the collective-oriented principle, they will have difficulty in escaping from their inertia. When answering the question of whether the July 1 Reform have brought about any ideological changes, the miners who are the biggest beneficiaries answered that they are determined to work harder for the nation and the social group they belong to.¹² The July 1 Reform has changed the life of North Koreans so that they can now receive wages adjusted to an appropriate level, with which they must make their own financial plans according to the new price system. This wage change will cause a big change in the public's mindset toward the economy. With the new pricing system and more of a market mechanism in effect, hard budget constraints in the household level will prompt North Koreans to be economically reasonable through their efforts to value private

¹⁰ *Chosun Ilbo* (6 September 2002).

¹¹ The information is drawn from the *Joong Ang Daily* (4 September 2002).

¹² *Choson Shinbo* (11 October 2002).

interests and to acquire more profits.¹³ North Koreans will have difficulties in the process, because they have never experienced a market economy before. Kim Nam-ung, a chief staff member at the *Sunchon* Vinalon Associated factory company, says, “Honestly speaking, we (workers) did not know the word ‘profit.’ We did not think about anything other than that we had to work.”¹⁴ Therefore, the government should create a program to promote the market economy mindset.

c. Establishing a Favorable International Environment

To successfully effectuate the July 1 Reform, North Korea absolutely needs foreign capital. Thus, the nation must have favorable foreign relations. As long as hostility between North Korea and South Korea continues, North Korea will maintain its policy of nurturing heavy industry, especially the defense industry, which will make it difficult to increase production of consumption goods and export-oriented products.

Kim Il-sung once said that North Korea spent about 30 percent of its gross national product (GNP) on national defense, which is why the nation did not have much room for economic development.¹⁵ From this remark, North Korea should learn that it must improve relations with South Korea to successfully execute the July 1 Reform and to attract foreign capital. In short, North Korea should improve its relations with South Korea (at least to get food aid) and—depending on the circumstances—it should improve and normalize its relations with the United States and Japan. To have the United States lift its economic sanctions against the poverty-stricken nation, North Korea should solve its nuclear issue first. After that, North Korea should secure the United States as a huge market for export and then obtain a membership in an international financial organization such as the International Bank for Reconstruction and Development (IBRD), the Asian Development Bank (ADB), or the International Monetary Fund (IMF). Also, North Korea should improve its relations with Japan so it can receive compensation for Japan’s colonial rule on the Korean peninsula.

C. Policy Tasks for Economic Reform

In a socialist system, economic reform means a shift from the centralized

¹³ Park Sun-seong (2002, 40).

¹⁴ *Choson Shinbo* (15 November 2002).

¹⁵ Lecture on 12 July 2003 by professor Song Doo-yool for the graduate students in the Graduate School of North Korean Studies at Berlin.

planned economy model to a decentralized market economy model. A centralized planned economy is characterized by (a) the central government as the decision maker, (b) hierarchical planning and a duty to carry it out, (c) economic reform and calculation quantified by material indicators, and (d) money taking on a passive role. To adopt a market economy model, North Korea should (a) adjust its investment priority, (b) increase the number of economic subjects of autonomy, (c) change the economic operating system, and (d) participate in the international market system. To participate in the international market system, North Korea should open its doors to the outside world by (a) decentralizing the decision-making system in trade, (b) increasing exports, and (c) attracting foreign capital.¹⁶ Hereinafter, as we examine these conceptions, this paper will present policy tasks for a successful execution of the July 1 Reform and for economic reform in terms of economic strategy, economic management, and socialist principles.

1. Economic Strategy

The heavy industry-oriented strategy of North Korea should be modified to develop its consumption goods and high-tech industries. The government should adopt a plan for normalizing production and for concentrating on traditional industries such as agriculture, light industry, and energy. However, for North Korea to make great strides, it should adopt a plan to develop the high-tech industry by using science and information. In other words, rather than adopting a catch-up development strategy for gradual industrial development, North Korea should try to solve its problems of food, clothing, and housing all at once by adopting a leap-frog growth strategy to innovate in all industries. It should concentrate especially on the information technology (IT) industry.¹⁷

In an editorial in *Rodong Shinmun* on 16 January 1999 titled “Let’s Pave the Way to a Strong and Prosperous Nation by Putting More Value on Science,” the North Korean leaders presented a science-oriented plan as a new strategy for economic development.¹⁸ Later, in a joint editorial in 2000, they argued that ideology, firearms, and science were the three pillars for a strong and prosperous nation. And after 4 July 2000 when a joint editorial by *Geunroja Shinmun* and *Rodong Shinmun* titled “Armed with Science, Let’s Build a Strong and Prosperous Nation” was released, science became an indispensable strategy for eco-

¹⁶ Kim Yeon-cheol (2001, 369).

¹⁷ The Northeastern Asia Team of the Federation of Korean Industries (2002).

¹⁸ Kim Kun-shik (2002).

economic development. What is important is that although North Korea acknowledges that its economy is at an underdeveloped level, North Korea is trying to rapidly shift directly into a digital economy. North Korea wants a rebirth as a strong and prosperous nation in the twenty-first century and does not want to go through the process step by step. This attempt is well explained by an argument that the prosperity of the people and the North Korean style of socialism will depend heavily on making a revolutionary turning point technology so the country can make much progress in a relatively short time.¹⁹

However, as in other underdeveloped nations, the reality in North Korea is significantly different from what it wishes to be. Despite the government's efforts to develop various programs to promote technology and to increase the budget for technology development by 5–6 percent, the nation is achieving less than expected in the course of the current economic hardship. North Korea has touted the idea that technology is a key to national prosperity and social development and also likened technology to military power and national power. To realize what it has advocated, North Korea should alter the existing mode of accumulating capital.

2. Economic Management

In terms of North Korean economic management, we need to take a look at the issue of material incentives, the expansion of managerial autonomy in state enterprises, and the renouncement of bureaucratic coordination.

First, North Korea should strengthen its material incentives. To this end, North Korea should learn a lesson from “*Sang Gue Je*,” the Chinese corporate reform in the late 1980s. That is, although a government-set price is adopted for planned output, the market price should be adopted on the basis of the rest of the economic activities. And for different wage levels to function as material incentives, people should be free to choose and to change their jobs. Even in the same occupation, they should be paid differently in proportion to their efforts.

Second, the government should give more autonomy to state-run companies. So far, the government has argued that the autonomy of state-run companies should be limited; it even claims that increasing corporate autonomy is a rightist propensity that causes unlimited autonomy and decentralization. The government has argued that autonomy should be permitted within management only and that autonomy is not in overall corporate activity. Moreover, if there were no limit, corporate autonomy would disrupt the governmental plan and balance

¹⁹ *Rodong Shinmun* (16 January 1999).

in the socialist economy, thereby pushing the nation into a state of anarchy. The government also argued that the state-run companies must complete the production goal set by the government, should not work on anything other than government orders, and cannot set their own goals.²⁰ However, North Korea cannot revive its economy with such an attitude. It should allow the companies to choose product items, output, and sales methods on their own. To guarantee companies that they can have a self-supporting accounting system, the government should remedy the high unemployment rate and, to that end, should introduce a contract and subcontract system, plus private commercial businesses and handicrafts.

Since the July 1 Reform, the North Korean economic system has evolved into a dual economic system of bureaucratic and market coordination. To be precise, after the economic crisis in the mid-1990s, North Korea already had a twofold economic system of a black market and a governmental plan for bureaucratic coordination. But the former was absorbed into the public area after the July 1 measures, which attempt to rationalize corporate operations by strengthening the self-supporting accounting system and by introducing market mechanisms. However, the measures do not mean that the government is trying to fully acknowledge corporate autonomy in the current phase. Expanding corporate autonomy is enmeshed with the fundamental question of price reform and accommodation of market mechanism. Also, increasing corporate autonomy and changing the decision-making responsibilities in the management level means the operational change of the *Daean* working system of collective leadership in the party committee. For effective economic decision making, the government must give up its existing system to prevent politicizing the economy and must strengthen the Cabinet-centered system and the Cabinet-responsible system with administrative-economic workers, not the party, taking initiatives in management.²¹

3. Socialist Principles

In terms of socialist principles, we must keep an eye on free pricing and reform of the banking sector and collective farms.

With the governmental pricing system, it is hard for North Korea to expect efficient distribution of resources. When the government sets the price, the change in supply and demand cannot be immediately reflected in the price, resulting in

²⁰ *Economic Research* (2001).

²¹ In the Cabinet-responsible system or Cabinet-centered system, the Cabinet is the leader and is responsible for economic management. Under the economic policy set by the party, it manages the economy in a coherent and centralized way. For details, refer to Kim Kap-shik (2001).

a rigidity of price that makes efficient distribution difficult.²² One merit of the fixed-price system is that it can provide management of state-run companies with stable conditions for production under the economic plan set by the government. However, the governmental pricing system is the biggest obstacle in economic development. It not only undermines efficiency in resource distribution but also nullifies economic stimulation coming from changes in the world economy. In addition, it weakens people's will to save.²³ Therefore, North Korea should seriously consider transferring the price-setting role to the invisible hands of the market.

Because the July 1 Reform was implemented to recognize market prices and to normalize the currency, North Korea now needs measures to strengthen the function of the banking sector. To strengthen the self-supporting accounting system and to effectively enact "the distribution system according to profit," while also coping with money-supply inflation, North Korea must introduce a dual banking system and must abandon its existing unitary banking system. Kim Yong-sul, the deputy trade minister, once said, "The financial system should play an important role for economic reform. So we are considering even introducing a trust banking system."²⁴

When a socialist nation tries to shift its economy into a market economy, the first step the nation undertakes in general is to change its banking system. Therefore, establishing a trust bank can be regarded as the nation's preparation for shifting its economy into a market economy. North Korea should shift its capital supply system from the current fiscal funding system to a financial funding system. To that end, the government should stop subsidizing governmental agencies and companies, and it should enable a trust bank to function as a commercial bank so that governmental agencies and companies can borrow money from the bank. The government must draw private capital into the financial sector. Therefore, the government should have commercial banks provide people with financial services, increase interest on deposits, enable people to freely deposit and withdraw money, protect depositor's privacy, and devise financial products for borrowing and lending. The central bank should regulate the commercial liquidity scale with a monetary policy, thus controlling commercial banks' borrowing and lending.²⁵

So far, the corporate sector has supported national finance in the name of the

²² The North Korean Economy Research Team of Bank of Korea (2002).

²³ Chun Hong-tack (1999, 169).

²⁴ *Joong Ang Daily* (4 September 2002).

²⁵ Park Suk-sam (2003).

“state-run company fund,” and “transaction profit.” If the government does not subsidize companies, it cannot demand excessive funding. Moreover, the government will have to ease the tax burden on state-run factory companies and revive the tax system, which was abolished in 1974.²⁶ The banking sector should go through fundamental changes so that it can play various roles such as improving its deposit and loan functions, managing corporate customers, and regulating prices.

Next, the government should gradually reform the nation’s collective farms. In the first phase, the central government should improve labor efficiency and productivity by handing over some of its power to collective farms and by operating collective farms and state-run farms in a way that allows the farmer’s income to increase according to productivity. In the second phase, the government should change the current system for production and distribution in the collective farm into a market-oriented system, by gradually adopting a free pricing system. In the third phase, the government should decrease the size of the farm for scale merit so as to get the benefits of managerial efficiency. In the fourth phase, the government should foster collective farms and state-run farms as public institutions that offer various agricultural services involving seeds, machines, financial services, and agricultural materials and services. It should also recognize farmland as private property and should take measures to attract investment in the sector and to improve institutions to maximize profits.²⁷

D. Prospects for Reform and Tasks Ahead

1. New Strategy for Social Development Under the Kim Jong-il Regime: Practical Socialism

The current changes in North Korea were inevitable. North Korean leaders took the July 1 Reform as a passive solution to overcome the current crisis in the socialist system, but the reform is likely to cause significant changes to the country’s development strategy in a comprehensive way. Of course, North Korea has not announced its intention for a full-scale change, but from the recent moves in North Korea, we can easily see that its development strategy has changed. Hereafter in this chapter, I call the move “practical socialism.”

North Korea has not yet conceptualized practical socialism in any officially

²⁶ Park Suk-sam (2002, 72–73).

²⁷ Kim Young-yun (2002).

written material. However, since the July 1 Reform, many people have remarked on the “policy to maximize profit in practice but secure socialist principles.”²⁸ Some people have even used the term “practical socialism” directly.²⁹ Lyum Byeong-ho, a professor of economics at Kim Il-sung University, explained, “When we say that we seek practicality, it means that we are trying to establish our economy in which people, equipped with modern technology, can get real profit while sticking to socialist principles.”³⁰

Since the July 1 Reform, there has been a tendency toward practicality, particularly in the business sector, and practicality is closely related with seeking profit in business. Kim Jong-il once said that the purpose of the July 1 Reform was to increase the material wealth of society and to raise the standard of living by promoting practicality in businesses and by motivating workers to work hard.³¹ And Kim Yong-sul, the North Korean deputy trade minister, remarked that shifting to a distinctive North Korean system for maximizing profit while adhering to socialist principles should be the basic principle behind the economic reform.³² In 2002 when the July 1 measures were announced, “practicality” was the most popular buzzword in North Korea; North Koreans even used the word when they made jokes.³³

While emphasizing practicality to such an extent, North Korea is trying to differentiate it from the meaning of “profit,” and is insisting that practicality should not be an individual goal, but that of a collective. This interpretation means that to seek practicality is not a matter of an individual or an institution, and that any economic activity to promote individual profit that disregards social needs cannot be permitted. The government preaches that a new system shall be operated in which a social member can get more benefits when he or she shows individual creativity that is favorable to a society or group under the government’s instruction.³⁴

North Korean theorists claim that practical socialism pursues an economy in which a socialist system can coexist with a capitalist economy and that the

²⁸ Kim Jong-il emphasized in his direction of 3 October 2001 that what is the most important in improving socialist economic management is to maximize practicality while sticking to the socialist principle. The points of this guideline, titled “To Improve and Strengthen the Socialist Economic Management to Meet the Need of Establishing a Strong and Prosperous Nation,” were reported in *Joong Ang Daily* (2 August 2002).

²⁹ *Choson Shinbo* (1 January 2003).

³⁰ *Choson Shinbo* (22 November 2002).

³¹ *Monthly Choson* (December 2002).

³² Kim Yong-sul (2002, 45).

³³ *Choson Shinbo* (25 December 2002).

³⁴ *Choson Shinbo* (22 November 2002).

difference between practical socialism and capitalism is a collective-oriented principle.³⁵ Therefore, a society embracing practical socialism tries to improve productivity and efficiency while sticking to collective-oriented principles—even when seeking profit.³⁶ From the description of practical socialism as a compromise between capitalism and socialism, North Korea—in this transitional period—emphasizes that seeking practicality in the business sector does not mean seeking individual profit; it does mean advancing collective interest, an important goal of socialism.

At the moment, North Korean theorists mention practical socialism when explaining only the nation's strategy for economic development. However, for a nation to gain practicality in a real sense, it needs not only positive economic change but also appropriate political and ideological changes. Then, practical socialism in the business sector will spill over into other areas. It will eventually become a foundation for a comprehensive strategy for national development that concerns all areas such as politics, economy, and ideology.

2. From Economic Reform to System Reform

North Korea's economic management of socialism has two faces; they reflect characteristics of communism and of socialism, which is a transitional system into communism. The aspects of communism (the more-developed phase of the two) can be witnessed within economic management of the party control, the planned management of the economy, the so-called mass line, and the collective-oriented principle. The aspects of socialism (the less-developed phase) can be witnessed within relative autonomy of the state-run companies, the self-supporting accounting system, the distribution according to individual amounts of work, the commodity-currency relations, and the use of the value principle.

The North Korean government should effectively deal with both aspects, but it claims that the socialist aspect should be used for collective interest in the

³⁵ This claim reflects the labor party's and the North Korean government's thoughts that the absolute supremacy of the socialist economy is the supremacy of the collective-oriented principle over individualism (*Choson Shinbo*, 19 July 2002).

³⁶ Huh Jae-young, who has taught economics at Kim Il-sung University since Kim Jong-il attended the university, says that there was a sign of this kind of practical socialism in Kim Jong-il's thesis. The idea of seeking practicality based on the collective-oriented principle was organized in that 1994 thesis titled "Socialism Is Science." "At that time he didn't use the word 'practicality,' but he used the word 'economic effectiveness.'" There are many theses written to back up his idea. His theory was that we should not just try to gain more than invested, but try to gain a profit which can be returned to society. I think that the theory has become the ground for the present practicalism" (*Choson Shinbo* 22 November 2002).

current phase of society. It also says that the socialist approach should not be disregarded but that valuing it too much can create a risky situation in which capitalistic factors prevail. Those factors might result in “degeneration” of the socialist economy into the capitalist economy.³⁷ The government adds that the more a socialist society develops, the more obvious its communist characteristics. Then the society’s socialist characteristics of the transition phase will wane.

In the same context, the July 1 adjustment measures do not break away from the theory for socialist economic management of *juche*. And practical socialism is a case in point. It shows that North Korea is trying to maximize practicality while sticking to socialist principles. North Korean theorists say that an economy based on practical socialism is a compromise solution between the socialist economy and the capitalist economy. In other words, they say that North Korea should try to enhance productivity and efficiency while adhering to the collective-oriented principle, which is the difference between practical socialism and capitalism. In reality, the farmers’ market is operated under the government administration, and the price of products traded in the market is capped. So, the price can move with the balance of supply and demand but cannot exceed a designated limit. This arrangement is why North Korea considered the July 1 Reform as an improvement and not as a change in the existing economic management.

In the 1990s, industrial products were already traded in the farmers’ market because most factories and companies could not normalize production on their own. However, in March 2003, the North Korean government officially expanded the farmers’ market into the market of all kinds of consumption goods, where not only agricultural products but also industrial products are traded. This expansion can be considered as the government’s expression of its will to actively manage the market so North Korea ensures that the market functions as it should to meet social needs. However, it is more important to notice that, as a part of the economic reform, the view of market function is changing.³⁸ In the past, North Korean officials used rhetoric such as the “market should be a channel of distribution” and “although North Korea is a socialist nation, it should not disregard the function of the market.” Now, they mean it.³⁹

³⁷ For details, refer to Park Yong-geun et al. (1992, 17–26).

³⁸ *Choson Shinbo* (16 June 2003).

³⁹ When I visited Pyongyang in August 2003, North Korean guides and the staff members at Hotel Yang Gak-do seemed to be comfortable using the word *shizang* (market), which was evidence that the nation had changed a lot since 2001, when I visited for the first time. In September 2003, when I visited again as a member of a Pyongyang tourist group, I could feel that North Koreans’ interest in making money had been rapidly growing. For example, cameramen videotaped tourists and, after editing them, sold the videotapes at a high price on the tourists’ departure day. Wherever they go, tourists can see vendors who sell souvenirs and food from makeshift stands.

North Korea claims that the July 1 Reform and the ones following are still in accordance with the *juche* theory of socialist economic management because they are based on a “collective-oriented principle.” That principle is essential to socialism. The measures are also based on “means of production as government property,” which is an underlying belief in the socialist economy. However, the July 1 measures have improved the instruments that reflect characteristics of the economy in its transitional phase, such as the self-supporting accounting system, distribution according to the individual work amount, commodity–currency relations (that is, market principle), and use of the value principle. The measures also include individual burdens for housing, which eases the government’s burden. The measures also indicate that North Korea is heading not for centralization, but for decentralization—as seen in the enhancement of corporate autonomy. It is also adopting some traits of market regulation while abandoning some traits of planned regulation.⁴⁰

Therefore, the July 1 Reform conflict with the government’s claim that the more a socialist society develops, the more its characteristics of communism become apparent and its characteristics of the transitional phase get weakened. It shows that the measures are placed on a position significantly different from the past theory of the North Korean economic management. Thus, in the 10 June 2003 editorial by the central news agency of North Korea (*Choson Jungang Tongshin*), the July 1 Reform were described as measures to reform the economy, rather than to improve economic management.⁴¹ Likewise, North Korea is gradually carrying on economic reform, the first step toward a system reform.

The North Korean government strongly claims that the July 1 Reform reflect its will to adhere to the socialist economy on the basis of bureaucratic coordination and collective-oriented principles. However, in reality, the measures encourage market coordination and decentralization. Therefore, the measures are believed to have a possibility of leading to an overall system reform, regardless of the government’s intentions. The changes that the July 1 Reform will yield are irreversible.

3. Tasks for System Reform

North Korea claims that its practical socialism is based on socialist principles such as the collective-oriented principle and governmental control. In reality, however, the nation values practicality almost all the time and sticks to

⁴⁰ Kang Il-chun (2002).

⁴¹ *Dong A Ilbo* (20 June 2003).

socialist principles only when it comes to social integration. North Korean theorists have applied practical socialism only to economic reform. Nonetheless, to advance practical socialism, the country should have appropriate political and ideological conditions. Indeed, the changes taking place in North Korean politics and ideology can be explained well with practical socialism. This explanation hints that practical socialism will cause system reform involving all areas including politics, economy, and ideology.⁴²

To begin with, much effort toward political reform is required if practical socialism is to become the grounds for a new strategy for system reform, because reform has been applied only to the economy. For the July 1 measures and practical socialism to produce successful results, the labor party, which has been acting as a guide in all sectors, should be reduced to a regulator of political ideology and a recruiter of elites. As for the economy, the Cabinet, relatively sensitive to efficiency, should be given all power. North Korea introduced a system that is *Jeongmuwon* (state affairs committee) responsible and a *Jeongmuwon*-centered system in the mid-1990s. The country developed the systems into a Cabinet-responsible system and a Cabinet-centered system so that the labor party could focus on political ideology issues. The *Jeongmuwon* and the Cabinet can concentrate on economic issues.⁴³

Although the Cabinet-centered system stems from the principle of separation between party and government, it will take time before the system completely settles in to an institutionalized level. That is, in reality, it is imperative to consolidate the Cabinet-centered system. Even now when the market plays a bigger role than in the past—thanks to economic reform—the government wants to retain the same power it used to have as it tries to control the market through bureaucratic coordination. To solve this problem, North Korea should introduce pertinent rules and laws and should give all economic issues into the hand of the Cabinet. Also, the Cabinet should not assume that the market coordination sys-

⁴² When we consider North Korea's system reform, we should also consider the economy, politics, and ideology all together. The reason is that when a socialist country seeks to establish or change its system, the move is driven by industrialization, institutionalization, and legitimization.

⁴³ The increased role of the Cabinet as an organization responsible for the economy became evident during the fourth session of the tenth Supreme People's Assembly convened in April 2001. During the session, the projects to be pursued by the Cabinet in 2000 (*Juche* 89) and tasks to be implemented in 2001 (*Juche* 90) were discussed. This discussion testifies to the improved status of the cabinet given that there has never been discussion about projects by the Cabinet even though the Assembly settles the budget for the preceding year and deliberates on budget issues for the corresponding year. The fourth session of the tenth Supreme People's Assembly, which convened in South Hong Seong Province, serves as an opportunity to enhance the responsibilities and roles of the Cabinet so it could meet the demands of real improvement (*Choson Sinbo*, 11 April 2001).

tem is incompatible with the bureaucratic coordination system to the level that it may gravely undermine government control. Rather, it must strengthen the role of the market coordination system. As long as North Korea highly values bureaucratic coordination and the politicizing of the economy, economic reform cannot develop into system reform.

Next, the *juche* ideology should become flexible to suit current changes in North Korean politics and economy. The *juche* ideology that North Korea officially upholds has raised its status from practical ideology, which provides an individual means to realize Marxism-Leninism in North Korea, to pure ideology, which provides concrete principles and means that are based on its own truth.⁴⁴

It suggests something that we should note. It was not the *juche* ideology of “pure ideology” but subordinate ideologies that encouraged people to overcome the crisis in North Korea. Those ideologies were based on *juche* ideology, but the system for realizing them and the logic to explain them were more detailed and concrete. This approach of differentiating subordinate ideologies from *juche* ideology means that since then there have been continuous efforts to justify the existing system with subordinate ideologies, not with *juche* ideology, and that slogans such as “Let’s hold out and endure” and “Let’s build a strong and prosperous nation” have played an important role. The subordinate ideologies have undermined the rule-making power of *juche* ideology concerning the economic system. Indeed, North Korean defectors say that an increasing number of North Koreans do not know the contents and principles of *juche* ideology.

Therefore, to actively push ahead with economic reform and to develop it into system reform, North Korea should weaken the influence of *juche* ideology and should strengthen subordinate ideologies after making the “pure” *juche* ideology more abstract and then keeping it as a nominal ideology. In fact, *juche* ideology emerged as a practical ideology in the 1950s and later replaced the Marxism-Leninism of pure ideology. This change hints that subordinate ideologies justifying the existing system may replace *juche* ideology, the current pure ideology. In short, to develop economic reform into system reform, North Korea should make *juche* ideology more abstract, should weaken its influence, and should politically make use of subordinate ideologies, which are a better fit for

⁴⁴ While analyzing the ideology of the Chinese Communist party, Franz Schurmann (1968, 18–24) explained that pure ideology was Marxism-Leninism, which provided an abstract view of the world, and that practical ideology is Maoism, which provided the principle and methods for practice. This analysis was raised because he thought that Marxism-Leninism, the truth, gave rise to Maoism, practical ideology, through the Chinese revolution and practical experience.

the current changes in North Korea.⁴⁵

North Korea claims that practical socialism for economic reform is not based on the individualism of capitalism but on the collectivism of socialism, thereby presenting the long thesis of “Socialism Is Science” by Kim Jong-il in 1994 to support its claim.⁴⁶ This thesis shows that after Kim Il-sung died and Kim Jong-il seized power, emphasis on core control has been giving way to emphasis on people’s voluntarism. The emphasis on people’s voluntarism and creativity is closely related to the stress on collectivism and thought-remolding. It can be interpreted as a North Korean effort to overcome the crisis with mental armament rather than with material conditions.⁴⁷

However, North Korea may have difficulty encouraging people’s participation because it cannot emphasize people’s voluntarism and collectivism at the same time. The emphasis on people’s voluntarism can cause conflict with the collectivism of national value and the individualism now arising among North Koreans. Although the conflict might not become apparent, North Koreans will gradually obtain a practical mentality. This process will be encouraged by the underlying principle of *juche* ideology: it is the self that determines one’s fate; it is the self that changes one’s fate. The principle shows that each individual should secure his or her own livelihood, which means that individualism, rather than collectivism, will prevail in the North. By the same token, North Koreans will eventually have their own view of life, which is based on individualism and considers one’s own well-being and pleasure as the purpose in life, rather than the view—based on collectivism—that identifies one’s fate with the fate of the group one belongs to.

North Korean people have long acknowledged the value of money and the importance of individual practicality because they benefit from the practice of directly buying goods in the farmers’ market. Recent measures to reform and open the nation have boosted their acknowledgment. In the past, the government secured the people’s living, but now the people have to make their own living. The July 1 measures have encouraged people to work more, and now people themselves ask for more work to do. Some people said, “Employers in the farm are trying hard to increase what they earn, and workers demand to work

⁴⁵ In relation to the prospect for changes in the *juche* ideology, Seo Jae-jin has made an interesting argument: the same people playing a leading role in the core principle of *juche* can also act as a driving force for revolution and nation building. It could be used in a resistance ideology that will bring about fundamental changes in North Korea’s system (Seo Jae-jin, 2001).

⁴⁶ *Choson Shinbo* (22 November 2002).

⁴⁷ Jang Dal-jung (1999, 28–33).

more. They prefer hard work to get more income.”⁴⁸ This quote hints that although the government preaches collectivism, people try to advance their own interests. North Korean leaders cannot help but recognize or are already aware of individuals’ pursuit of self-interest, although they emphasize the collectivist characteristics of practicality by differentiating practicality from profit. The July 1 Reform will promote individual practicality rather than the empty slogan of collectivism, which means that for economic success and overall system reform, North Korea needs to embrace, not discard, pragmatism and to change its ideology to embrace the social changes.

E. Concluding Remarks: System Reform and System Transition

In general, the concept of system change includes both system transformation and system reform.⁴⁹ According to Janos Kornai, a system change can be classified differently depending on its depth in content and the radicalism of its speed. For example, when a change is partial in content and slow in speed, it should be defined as reform. Conversely, when a change is deep in content and radical in speed, it should be defined as revolution.⁵⁰

Kornai’s revolution presupposes system transition, a shift from an existing system to a new one. Therefore, a revolution causes overall changes in social order. In contrast, reform refers to a partial system change through a shift in policy, not through a radical and massive revolution. It is a top-down process because it is attempted by those who are in power and it pushes out the government-led changes associated with the existing leadership.⁵¹

The relationship between a reform and a system transition can be different in content and speed, depending on the political and economic situation at home and abroad. In other words, a reform either can stop as a reform within the system, or can further develop into system transition or system transformation.

Therefore, as seen in the socialist nations in Eastern Europe, when a nation undergoes rapid changes in politics, ideology, and economy, it can be said to undergo a system transition. When a nation undergoes a shift in the economic system while its fundamental system—its political system in particular—re-

⁴⁸ *Choson Shinbo* (2 August 2002).

⁴⁹ A transition of the socialist nation’s system, including that of North Korea, can be interpreted as a transition because it means a shift from an old system to a new system.

⁵⁰ Kornai (1992, 386–92).

⁵¹ Jeong Hyung-gon (2001, 21–27).

mains unchanged like China, it can be said to undergo a system reform.⁵²

In this regard, the July 1 Reform is part of a top-down reform, not a system transition, because the measure is aimed to reform the nation's economy, not its politics or ideology. To revive its economy and secure North Koreans' livelihood, North Korea has launched a North Korean style of economic reform, adjusting its centralized planned economy. However, the nation is still fixated on collectivism and party dictatorship, with *Suryung* (the absolute leader) at its core.⁵³ In fact, we are not sure of the possibility of system transition from the current system reform but it is still a system reform, which shakes the existing system and can be a stepping stone toward a system transition.⁵⁴

An intended economic reform devised by those in power can become mere limited reform, but also it can result in a system transition—an unintended consequence—that depends on conditions at home and abroad. The July 1 Reform and other follow-up measures are reforms within the system. Yet, for North Korea to get the anticipated economic benefits and, furthermore, to change its existing system to the degree of a system change, it must have the possibility of developing into a system transition. That change is possible only when North Korea (a) completes comprehensive economic reform measures and alters the *Suryung* system in politics, (b) abstracts *juche* ideology in ideology, and (c) weakens collectivism in living culture. Then, North Korea will see the beginnings of a system change.

References

In Korean

Chun Hong-tack. 1999. "North Korean Financial System." North Korean Economic Forum. *Theory of South and North Korean Economic Integration*.

⁵² Radical system transition can be called "dual transition" where fundamental economic reform is pursued in line with or through political reform. System reform, however, is a "single transition" in which political leadership changes the economic system on a gradual basis with the political system intact (Ha Sang-shik 1997, 151).

⁵³ Choi Hong-gyu, chief of the North Korean National Plan Committee, in *Choson Shinbo* (1 April 2003).

⁵⁴ Park Hyeong-jung (2003) divided economic reform in socialist nations into four groups: (a) Stalinist classic system, (b) partial reform system, (c) eastern Europe-style market socialism (induced planned economy), or (d) Socialist commodity economy (with Chinese characteristics) and (the Chinese) socialist market economy. He explained that North Korea's July 1 Reform represented a transition period from the socialist commodity economy to a partial reform system, projecting that North Korea will take actions to move further toward the socialist commodity economy.

- Seoul: Orum.
- Ha Sang-shik. 1997. "Economic Reform and Political Change: Prospect for North Korean Reform." *Collection of Theses on International Politics*. vol. 37, no. 2.
- Jang Dal-jung. 1999. "Kim Jong-il Regime and *Juche* Vision." *Asia Research*. no. 101.
- Jeong Hyung-gon. 2001. *Economics on System Transition*. Seoul: Chung-am Media.
- Kim Kap-shik. 2001. "Research on the Change in the Policy-Making Process: The Cabinet-Responsible System, the Cabinet-Centered System, and Separation of the Special Cabinet and Ruling Party." *Collection of Rising Scholars' Papers*. Seoul: Ministry of Unification.
- Kim Kun-shik. 2000. "North Korean Strategy for Economic Development in the Kim Jong-il Era: From the Three Biggest Principles to Science and Technology-based Economy." *North Korean Studies Review*, vol. 3, no. 2.
- Kim Seong-cheol et al. 2001. *North Korean Model for Economy Transition: Lessons from the Experience of a Socialist Nation*. Seoul: Korean Institute for National Unification.
- Kim Yeon-cheol. 2001. *Industrialization and Economic Policy of North Korea*. Seoul: Historic Critics.
- . "Appraisal and Prospects of North Korean Economic Reform." Paper presented on 21 August 2003 at the workshop for experts in North Korean economy, held by the Graduate School of North Korean Studies at Kyungnam University.
- Kim Yong-sul. October 2002. "Explanation on North Korean Economic Policy." *KDI's Review on North Korean Economy*, Vol. 4, No. 10.
- Park Yong-geun et al. 1992. *Economic Management Theory of Juche*. Pyongyang: Social Science Publishing House.
- Park Hyeong-jung. "Evaluation of North Korea's Ongoing Economic Reform and Prospect." Paper presented on 21 August 2003 at the workshop for experts in North Korean economy, held by the Graduate School of North Korean Studies at Kyungnam University.
- Park Suk-sam. "Current Status and Reform Prospect of North Korean Finance." *100 Days after North Korean Reform and Opening: Reality and Prospect*, paper presented in the international academic workshop jointly held on 11 October 2002 by the National Unification Institute of Joong Ang University and Maeil Business Newspaper.
- Seo Jae-jin. 2001. *New Analysis on Formation of and Change in Juche*. Seoul: Korea Institute for National Unification.
- The North Korean Economy Research Team of Bank of Korea. 2002. "Meaning

and Prospect of the Recent North Korean Economic Measure.” Press released by Bank of Korea on the date of 22 August.

The Northeastern Asia Team of Federation of Korean Industries. “Meaning of and Future Tasks for the Recent North Korean Economic Reform.” Press released by Federation of Korean Industries on the date of 29 July, 2002.

Choson Shinbo

Rodong Shinmun

JoongAng Ilbo

Chosun Ilbo

In English

Kornai, Janos. 1992. *The Socialist System: The Political Economy of Communism*. Princeton: Princeton University Press.

Schurmann, Franz. 1968. *Ideology and Organization in Communist China*. Berkeley and Los Angeles: University of California Press.

North Korea

Development Report 2003/04

As a result of North Korea's isolation from the outside world, international communities know little about the status of the North Korean economy and its management mechanisms. Although Recently, a few recent changes in North Korea's economic system have attracted international interests, but there is much confusion remains as to the characteristics of North Korea's recent policy changes and its future direction due to the lack of information. Therefore, in order to increase the understanding of readers in South Korea and abroad, KIEP is releasing *The North Korea Development Report* in both Korean and English. The motivation behind this report stemmed from the need for a comprehensive and systematic investigation into North Korea's socio-economic conditions, while presenting the current status of its industrial sectors and inter-Korean economic cooperation. The publishing of this second volume is important because it not only supplements the findings of the first edition, but also updates the recent changes in the North Korean economy. The topics in this report include macroeconomics and finance, industry and infrastructure, foreign economic relations and inter-Korean economic cooperation, social welfare and science & technology. This report also covers the 'July 1 Economic Reform' launched two years ago and subsequent changes in the economic management system. *The North Korea Development Report* helps to improve the understanding of the contemporary North Korean economy.

KOREA INSTITUTE FOR
INTERNATIONAL ECONOMIC POLICY

300-4 Yomgok-dong, Seocho-gu, Seoul 137-747 Korea

Tel. (822) 3460-1114 Fax. (822) 3460-1144

URL: <http://www.kiep.go.kr>



Price USD 12