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Potential Risks in the Liabilities of Public Institutions and the Policy Response

December 2012

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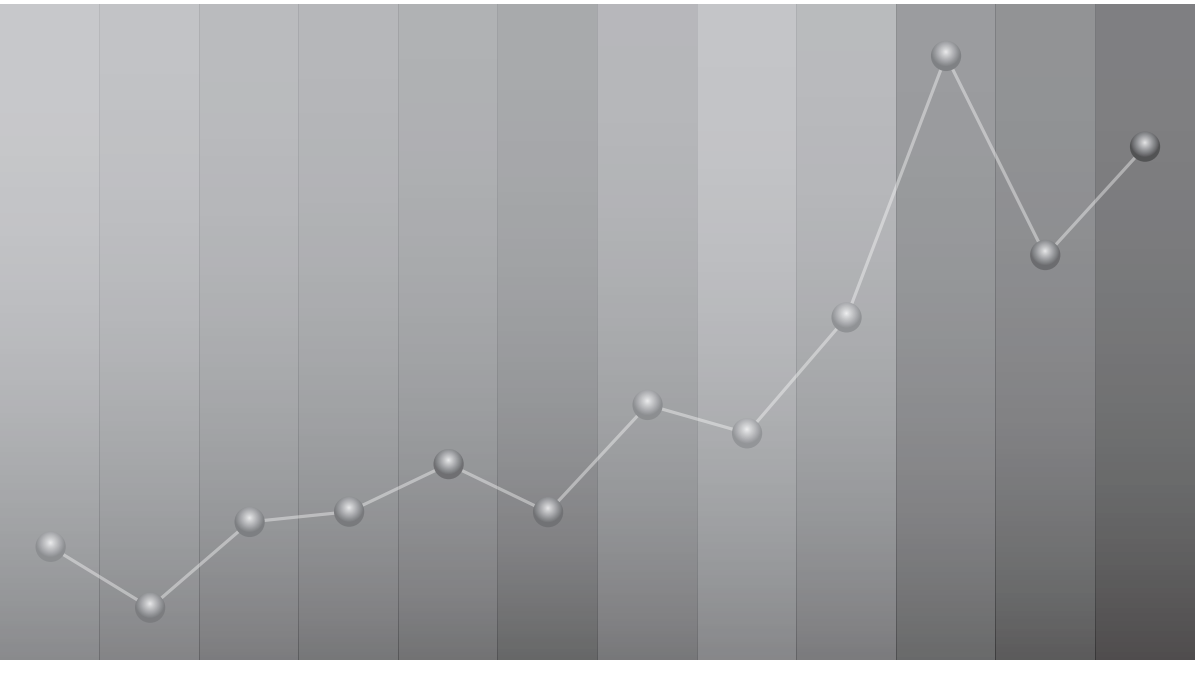

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Contents

I. Introduction 9

II. Current Status and Characteristics of Liabilities 12
1. Scope of Public Institutions and Statistical Standards 12
2. Changes in Total Liabilities 16
3. Distribution of Liabilities by Institution 23
4. International Comparison of Public Institutional Liabilities 25

III. Assessment and Estimation of the Liability Risk of SOEs 27
1. Assessment Criteria for SOE Liability Risk 27
2. Results of Liability Risk Diagnosis 33

IV. Analysis of Causes of Liabilities 37
1. Korea Expressway Corporation 37
2. Korea Gas Corporation 39

3. Korea Railroad Corporation ····· 42
4. Korea Electric Power Corporation ····· 45
5. Korea Land and Housing Corporation ····· 48
6. Korea Water Resources Corporation ····· 50
7. Results of Analyzing Sources of Public Institutions' Liabilities ····· 53

V. Policy Responses ····· 55
1. Current Policy Responses ····· 55
2. Classification of Countermeasures and Key Issues ····· 56
3. Policy Responses Toward Resolution of Liabilities ····· 59

VI. Conclusions ····· 63

References ····· 66

List of Tables

<Table II-1> Classification of SOEs and Quasi-governmental Institutions 13
<Table II-2> Liabilities of Public Institutions (Total — General Government Fund — Institutions Under the General Government — Financial Institutions — Pension) 21
<Table II-3> Share of Liabilities to GDP 22
<Table II-4> Liability Rankings of SOEs 24

<Table III-1> Financial Indicators Used to Derive Indicators for the Measurement of SOE Liability Risk 30
<Table III-2> Risk Ratings by Financial Warning Signal 32
<Table III-3> Method of Estimating Overall Liability Risk 33
<Table III-4> Summary of the Result 33

<Table IV-1> Status of Additional Investments 38
<Table IV-2> Assets, Liabilities and Capital (As of late 2011) 40
<Table IV-3> Causes of Liabilities 41
<Table IV-4> Sizes of Assets, Liabilities and Capital (As of late 2011) 43
<Table IV-5> Debt Ratio by Projects of K-Water 52
<Table IV-6> Main Causes of Liabilities 53

<Table V-1> Methods of Liability Reduction 57

List of Figures

[Figure II-1] Changes in the Increase of Public Institutions' Liabilities 23

[Figure III-1] Procedure for Liability Risk Assessment of Public Institutions 28

[Figure III-2] Method of Measuring Risk Indicators for Public Institutions' Liabilities 29

[Figure IV-1] Investment Trend 42

I

Introduction

Because it holds legal ownership with managerial and supervisory authority in their regard, the government cannot evade the financial liabilities of public institutions. In addition, as the greater part of the activities of public institutions is undertaken on behalf of the government, their liabilities are often revealed to have originated from government policies. For this reason, credit rating agencies have routinely assigned top ratings (AAA) to most public institutions, even if they hold considerable liabilities, considering that these will eventually be settled by the government.

Nevertheless, most liabilities of public institutions are excluded from the aggregate sum of government debt. Among public institutions, a number of quasi-governmental institutions are included in the general government category since they generate a relatively small proportion of their revenue and primarily conduct government-commissioned projects. The liabilities of such public institutions clustered within the general government sector are counted as part of government debt. However, those which produce significant amount of independent revenue, such as state-owned enterprises (SOEs), are not included within the general government

※ The authors are grateful for the help of Kangshin Lee and Shinhyeong Song in the English editing process.

category, and thus SOE debts are excluded from government debt. There are an almost equal number of quasi-governmental institutions, included as part of the general government, compared to SOEs which are not. However, the quasi-governmental institutions are relatively small in size compared to SOEs and their liabilities account for a mere 8.4 percent of the total liabilities of all public institutions. This indicates that 91.6 percent of public institutional liabilities are not included in overall government debt.

The liabilities of public institutions have been managed in a rather relaxed manner compared to government debt. As for their managing authority within the government, the ministries and agencies in charge of respective projects assume primary responsibility for these public institutions, but as the Ministry of Strategy and Finance is responsible for overall management, including evaluation, it is accountable for public institutional liabilities as well. Fortunately, in recognition of the significance of the liabilities of public institutions, the Ministry of Strategy and Finance revised the National Finance Act and the Act on the Management of Public Institutions in 2010 to obligate public institutions to formulate medium- and long-term financial management plans and present them to the government. However, as each institution entails unique causes for their increase in liabilities, addressing this problem is not a simple matter. This study was undertaken to shed (a) light on the essential dangers of public institutional liabilities and suggest policy options to mitigate them (what is them?). Specifically, it aims to answer the following four research questions.

First, what is the precise amount of total public institutional liabilities? Chapter II formulates criteria and principles regarding the volume of public institutions' liabilities in order to obtain accurate statistics on the size of liabilities to be managed. Second, how much risk does each public institution pose in regard to their liabilities? It is not especially meaningful to discuss the peril of the liabilities of public institutions as a whole. Therefore, Chapter III divides the degrees of liability risk faced by each institution into the four categories of red, orange, yellow and white based on financial warning signs. This classification model was designed to ensure that subjective judgments would be eliminated and that substituting financial indicators into the predetermined formula would lead to an automatic result. Third, what are the causes underpinning the

liabilities of public institutions and what are their future prospects? The triggers are largely comprised of excessive investment, rate regulation, low productivity and external factors such as oil prices and exchange rates. Chapter IV selects six SOEs with grave liability issues—the Korea Land and Housing Corporation, the Korea Electric Power Corporation, the Korea Gas Corporation, the Korea Expressway Corporation, the Korea Water Resources Corporation, and the Korea Railroad Corporation[1)]—and analyzes their financial status, sources of the liabilities and future financial prospects. In this chapter, the medium- and long-term financial plans submitted by respective public institutions are also evaluated. Fourth, what measures should the government take to address the problem of the liabilities of public institutions? Chapter V attempts to present a comprehensive strategy to manage the liabilities of public institutions.

1) For the selection of subjects for analysis, seven public institutions with heavy liabilities were initially identified. Of these seven institutions, the Korea National Oil Corporation was excluded because it showed a high degree of similarity to the Korea Gas Corporation in terms of the causes of liabilities, while the Korea Railroad Corporation was included in the analysis as its liabilities were primarily cost-driven as opposed to other SOEs.

II

Current Status and Characteristics of Liabilities

1 Scope of Public Institutions and Statistical Standards

A. Scope of Public Institutions

As the scale of the liabilities of SOEs and other public institutions may vary widely depending on the purpose and standards of statistical compilation, we will first examine certain commonly used standards and terms. Apart from those concepts established on an ad hoc basis, the three most common standards according to which statistics related to SOEs and other public institutions are compiled are Government Finance Statistics, National Accounts and the Act on the Management of Public Institutions.

To rationalize the management of public institutions, the South Korean government has classified and designated public institutions in accordance with the Act on the Management of Public Institutions. The three standards listed in the paragraph above differ from one another from the start in that while Government Finance Statistics and National Accounts are compiled for statistical purposes, the Act on the Management of Public Institutions is aimed at managing public institutions. Therefore, statistics generated based on this act might show a significant difference from those based on finance statistics or national accounts.

We will investigate the definition and scope of public institutions as

stated in the act. According to Article 4, the government may designate as public institutions those established by direct operation of another act with an investment by the government, institutions to which the amount of the government grants exceeds one-half of their total revenue, institutions over which the government has practical control (the government holding at least 50 percent of the outstanding shares or securing practical control with at least 30 percent of the outstanding shares), and institutions established by a public institution with an investment by the government or the institution that established them. However, because not all the institutions meeting these conditions are in fact classified as public institutions, the actual scope of public institutions may be narrower than that defined in principle. The act divides public institutions into SOEs (market-based and quasi-market-based), quasi-governmental institutions (fund-management-based and commissioned-service-based), and non-classified public institutions. The conditions defining each type of public institution are illustrated below.

<Table II-1> Classification of SOEs and Quasi-governmental Institutions

Type	Classification Criteria	
SOEs	The proportion of independent revenue within total revenue ≥ 50%	
	① Market-based (8)	The proportion of independent revenue within total revenue ≥ 85%, with total assets of at least two trillion won.
	② Quasi-market-based (14)	SOEs other than market-based SOEs
Quasi-governmental Institutions	Designated among public institutions other than SOEs	
	① Fund-management-based (16)	Quasi-governmental institutions to which the management of a fund is assigned or commissioned under the National Finance Act
	② Commissioned-service-based (63)	Quasi-governmental institutions other than fund-management-based quasi-governmental institutions
Non-classified Public Institutions	Public institutions other than SOEs and quasi-governmental institutions (185)	

Note: Specific criteria and methods of determining independent revenue and total revenue are prescribed by Presidential Decree.
Source: Ministry of Strategy and Finance

B. Key Issues Regarding Liability Statistics

Numerous controversies have arisen regarding the size of public institutions' liabilities, and figures vary greatly depending on data sources. For example, according to e-National Indicators, the total liabilities for public institutions as of the end of 2009 stood at 332 trillion won, but the National Assembly Budget Office (2010) estimated the figure at 599 trillion won, revealing a considerable discrepancy. One of the major causes of this disparity is the differences in the scope of public institutions included in each figure. While there is a degree of inescapable variation in the liability amount due to changes in the scope of designated public institutions, other issues are also raised concerning the liabilities of public institutions, which will be briefly discussed in this section. In particular, we will elaborate on the problems that may arise when simply totaling up the liability estimates presented in the ALIO (All Public Information in One) system, the financial information related to public institutions most commonly available for ascertaining the amount of liabilities incurred by public institutions.

1) Overlapping Liability with Subsidiaries

A portion of receivables and payables between public institutions are usually set off against each other. With simply totaling the liabilities listed in the financial statements of each institution without considering such set-offs, there arises the question of overestimation of the total liabilities of public institutions. The most typical example is the liabilities set off between a parent company and its subsidiaries. An estimate obtained by summing the liabilities of individual institutions and not taking such a set-off portion into account, would be greater than the proper figure. Transactions between a parent and its subsidiaries are in the nature of internal transactions within a corporate organization, and thus have no meaning when the organization is considered as a whole due to accounts receivable and accounts payable being set off against one another. Within the financial statements of an individual institution, however, such details are presented separately and therefore consolidated financial statements are necessary for understanding the status of set-offs. An illuminating

example is the relationship between the Korea Electric Power Corporation and its six generation subsidiaries. As of 2011, the sum of the liabilities of the corporation and its subsidiaries was approximately 89.5 trillion won, but the figure reported in the consolidated financial statements was about 82.7 trillion won, indicating a 6.8 trillion won (8.2%) gap. Although we attempted to estimate such liability differences for other institutions and their subsidiaries, there were difficulties stemming from a lack of available information. Excluding the Korea Electric Power Corporation, the differences are not presumed to be great.

2) Issues of including the Liabilities of Financial Institutions

The size of the liabilities of public institutions can vary considerably depending on whether or not public financial institutions are included. This is the most prominent reason that the total liabilities figures presented by the National Assembly Budget Office (2010) and e-National Indicators reveal such a significant variance. The data from the former feature a considerable amount of the liabilities of non-classified public institutions, accounting for more than half of the liabilities of all public institutions. This is due to the liabilities of public financial institutions, including the Korea Development Bank and the Industrial Bank of Korea, being included in the figure.

It is true that since the two banks were relieved of their designation as public institutions in 2012, the disparity would not currently be as significant even if all the liabilities of public financial institutions were to be included. However, discussion is called for as to the appropriateness of simply compiling the liabilities of public financial institutions with those of general public institutions. For example, an increase in the deposits of a financial institution is manifested as increased liabilities for the institution, but from this alone it cannot be said that the institution's financial status has deteriorated. Since the liabilities of financial institutions are notably distinct in nature from those of other types of institutions, figures that exclude such liabilities from the total liabilities of public institutions are considered more significant. This will be discussed later in greater detail.

3) Adding in Government Liabilities

Some have resorted to figures obtained by simply summing the liabilities of public institutions and the government, but this method includes not only a conceptual issue but also the technical question of overlapping. On the conceptual side, as a considerable portion of the liabilities of public institutions, especially those of SOEs and non-classified public institutions, differ significantly in nature from the government's liabilities, simply tallying up the two is inappropriate. On the technical side, the liabilities of public institutions and the government partly overlap. As of 2012, among 288 institutions designated as public institutions, 143 are included in the general government and their liabilities are incorporated within overall government liabilities. Therefore, if the total liabilities of public institutions including these and the government's liabilities are combined, overestimation occurs due to overlapping. In particular, since the scope of the general government expanded through the reform of the Government Finance Statistics in 2011, the amount of such overlap has increased.

2 Changes in Total Liabilities

Despite some limitations, data published on the ALIO website are the most common source for ascertaining the status of public institutions' liabilities. Thus, we will examine the current status and changes in the liabilities of public institutions based on ALIO data. In this section, we will apply a stricter standard than the data described by e-National Indicators to estimate the liabilities of public institutions in a narrow sense — that is, the liabilities of public institutions not included among those of the government.

A. Data Excluded from the Statistics

1) Funds Belonged in the General Government Jurisdiction

As previously mentioned, a share of the liabilities of funds managed by public institutions is included among government liabilities. The financial information on public institutions provided on ALIO includes not just information regarding public institutions' own accounts, but also the accounts of funds managed by public institutions. According to ALIO information on the balance sheets of public institutions, the number of public institutions responsible for fund management reaches 27, but there are currently a total of 31 funds since some institutions manage two funds. Public institutions serve as the managing authorities for 18 out of the 31 funds, but for the remaining 13 the government is the managing authority and public institutions only manage them on commission. These funds managed by public institutions on commission but with management authority retained by the government are included in the government debt statistics. Therefore, this section will exclude these 13 among the 31 funds identified by the ALIO system. Of the 18 funds whose management authorities are public institutions, 14 are classified into the general government category in the Government Finance Statistics and their liabilities are defined as government liabilities, leading to the consideration of them as not truly necessary for recognition as public institutional liabilities given the purpose of this study. Therefore, this study only includes the remaining four funds classified as belonging to SOEs within the scope of public institutional liabilities in the narrow sense. These are the National Sports Promotion Fund, the Private School Teachers' Pension Fund, the Private School Promotion Fund and the Housing Finance Credit Guarantee Fund.

2) Institutions Belonged in the General Government Jurisdiction

As of the end of 2011, the number of public institutions classified into the general government category stood at 143, including one quasi-

market-based SOE,[2] 48 quasi-governmental institutions and 94 non-classified public institutions. Apart from these, there were 145 other institutions, including 27 SOEs, 35 quasi-governmental institutions and 83 non-classified public institutions. In the liability statistics, the difference after deducting the liabilities of the 143 public institutions falling under the general government from the total liabilities of public institutions stands at only approximately 12 trillion won. The reason that almost half of the 288 public institutions were excluded but total liabilities were reduced by only 12 trillion won is that most of the institutions included in the general government category are characterized by relatively small liabilities. Among the institutions pertaining to the general government, those with considerable liabilities are the Korea Energy Management Corporation (4.1 trillion), the Korea Asset Management Corporation (1.3 trillion) and the Yeosu Gwangyang Port Authority (1.2 trillion), while the remaining institutions mostly have liabilities of 100 billion won or less.

3) Exclusion of Financial Institutions and Pension Liabilities

The liabilities of financial and non-financial institutions differ because the two types of institutions show clear distinctions from each other in terms of form of financial statement and account titles, as well as in the basic nature of their liabilities. For example, the business activities of a financial institution begin from deposit liabilities (the money deposited with a financial firm by customers), and deposits made by customers in banks, deposits paid to securities companies and accumulated premiums paid for insurance policies are all considered deposit liabilities. Therefore, unlike in the case of general companies, financial institutions should not simply be viewed as showing poor financial stability when they carry a high proportion of liabilities. For this reason, there is a limit to discussing this matter based on data obtained by simply compounding the liabilities of financial and non-financial institutions; instead, their

2) The Yeosu Gwangyang Port Authority is currently a quasi-market-based SOE, but when the scope of the general government was determined in 2011 it was classified as a quasi-governmental institution and thus included in the general government sector.

liabilities need to be examined separately. Accordingly, this section will explore the liabilities of public institutions excluding those of financial institutions. There are presently a total of 17 institutions classified as financial institutions, of which seven[3] were already eliminated due to being classified as pertaining to the general government and the remaining ten,[4] including the Korea Housing Guarantee Co., Ltd, being otherwise excluded for the reason of being financial institutions. Besides financial institutions, pension institutions such as the Korea Teachers Pension were also omitted out of consideration of their distinct characteristics. Liabilities for pension schemes are, although excluded from the general government liabilities, somewhat different in nature from the liabilities of common public institutions. Therefore, they appeared to be an area that should be examined within the context of pension policies and were thus not included in this study.

B. Total Liabilities of Public Institutions and Changes in Their Amount

1) Total Liabilities

The institutions included in this study following the application of the criteria above total 134 and are comprised of 26 SOEs, 30 quasi-governmental institutions and 78 non-classified public institutions. As of 2011, the ratio of public institutional liabilities to GDP estimated according to these criteria was about 28 percent, which is a reduction of 9.5 percentage points compared to the 37.5 percent officially reported through e-National Indicators. The reason we should pay particular attention to the liabilities of public institutions is that although not classified as part

3) The Korea Technology Finance Corporation, the Korea Credit Guarantee Fund, the Korea Deposit Insurance Corporation, the Korea Trade Insurance Corporation, the Korea Asset Management Corporation, the Korea Student Aid Foundation, and the Korean Federation of Credit Guarantee Foundations.

4) The Korea Housing Guarantee Co., Ltd, the Korea Housing Finance Corporation, the Postal Savings & Insurance Development Institute, the Korea Exchange, the Korea Securities Depository, the Special Post Office Pension Service, the Korea Venture Investment Corporation, the Korea Exim Bank, the Korea Finance Corporation, and the Korea Investment Corporation.

of the government debt, they remain as "hidden" liabilities for which the government is likely to be required to take ultimate responsibility. The 28 percent public institutional liability to GDP ratio estimated in this study is in no sense a small figure. This is all the more so given that the South Korean government's debt-to-GDP ratio reached 37.9 as of 2011 percent on an accrual basis.

<Table II-2> Liabilities of Public Institutions (Total — General Government Fund — Institutions Under the General Government — Financial Institutions — Pension)

(Unit: 100 million won)

Institution Type	Own Accounts						Fund Accounts					Total					
	2007	2008	2009	2010 (K-GAAP)	2010 (IFRS)	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010 (K-GAAP)	2010 (IFRS)	2011
Total Liabilities	1,749,932	2,204,324	2,614,612	2,992,951	3,095,836	3,459,531	3,405	3,694	4,311	5,748	7,459	1,753,338	2,208,019	2,618,923	2,998,698	3,101,584	3,466,990
SOEs	1,552,590	1,981,514	2,353,225	2,698,085	2,798,461	3,133,942	0	0	0	0	0	1,552,590	1,981,514	2,353,225	2,698,085	2,798,461	3,133,942
Market-based	595,103	797,458	882,630	991,346	1,117,525	1,295,040	0	0	0	0	0	595,103	797,458	882,630	991,346	1,117,525	1,295,040
Quasi-market-based	957,488	1,184,056	1,470,594	1,706,738	1,680,936	1,838,902	0	0	0	0	0	957,488	1,184,056	1,470,594	1,706,738	1,680,936	1,838,902
Quasi-governmental Institutions	160,416	181,079	213,940	244,154	244,154	270,324	94	79	62	24	58	160,510	181,158	214,002	244,178	244,178	270,382
Fund-management-based	8,010	9,058	9,817	9,934	9,934	9,907	94	79	62	24	58	8,105	9,137	9,878	9,958	9,958	9,966
Commissioned-service-based	152,406	172,021	204,123	234,220	234,220	260,416	0	0	0	0	0	152,406	172,021	204,123	234,220	234,220	260,416
Non-classified Public Institutions	36,926	41,732	47,448	50,712	53,221	55,265	3,311	3,615	4,249	5,723	7,401	40,237	45,347	51,697	56,435	58,944	62,666

2) Changes in Total Liabilities

In general, the liabilities of quasi-governmental institutions and non-classified public institutions have not undergone significant changes, while those of SOEs have witnessed a progressive increase. It was verified that the rise in the ratio of total liabilities of public institutions to GDP was largely due to the increase in SOE liabilities.

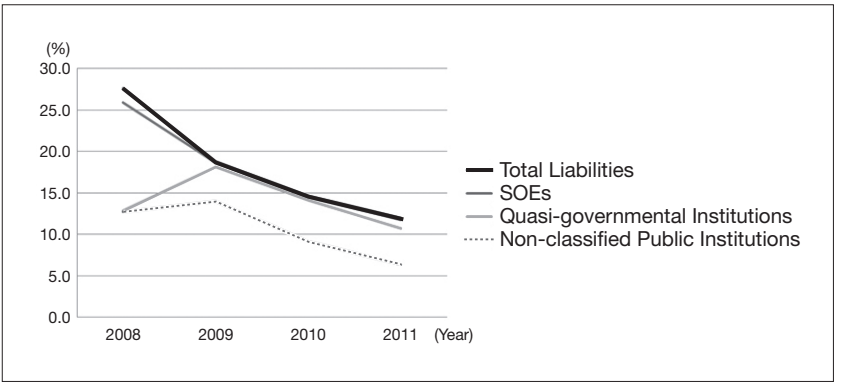
<Table II-3> Share of Liabilities to GDP

(Unit: %)

	2007	2008	2009	2010 (K-GAAP)	2010 (IFRS)	2011
Total Liabilities	18.0	21.5	24.6	25.6	26.4	28.0
SOEs	15.9	19.3	22.1	23.0	23.9	25.3
Market-based	6.1	7.8	8.3	8.4	9.5	10.5
Quasi-market-based	9.8	11.5	13.8	14.5	14.3	14.9
Quasi-governmental Institutions	1.6	1.8	2.0	2.1	2.1	2.2
Fund-management-based	0.1	0.1	0.1	0.1	0.1	0.1
Commissioned-service-based	1.6	1.7	1.9	2.0	2.0	2.1
Non-classified Public Institutions	0.4	0.4	0.5	0.5	0.5	0.5

It is noticeable that while the volume of liabilities and the liability-to-GDP ratio have both increased, the rate of increase itself has slowed since its 2008 peak. One problem with respect to the examination of these changes is that data consistency was undermined by a shift in accounting standards. The data from 2007 to 2010 were calculated based on Korean Generally Accepted Accounting Principles (K-GAAP) but the 2011 data were based on the International Financial Reporting Standards (IFRS). For 2010, the data were collected based on both K-GAAP and IFRS. Therefore, the yearly rates of increase for 2011 indicate increase rates as compared to the 2010 data based on IFRS, while the increase rates for the preceding years are those based on K-GAAP.

[Figure II-1] Changes in the Increase of Public Institutions' Liabilities



3 Distribution of Liabilities by Institution

A considerable portion of SOE liabilities are concentrated within selected enterprises. The seven SOEs with the greatest liabilities account for more than 95 percent of the total in terms of the size of liabilities; in particular, the liabilities of the Korea Land and Housing Corporation constitute approximately one half of total SOE liabilities. This suggests a need to thoroughly examine these seven enterprises in future policy responses related to the management of liabilities. When examining all quasi-governmental institutions, the Government Employees Pension Service reveals the greatest liabilities, making up about 74 percent of the combined total. In particular, it showed a considerable year-on-year increase against 2010 because the amount of liabilities for pension schemes was only reflected starting from 2011. The quasi-governmental institution with the second-greatest liabilities is the Korea Deposit Insurance Corporation which accounts for 9.3 percent of the total. This corporation also ranked second in terms of magnitude of increase, which was incurred by the risk management process including rescue aid for failing savings banks. Among quasi-governmental institutions outside of those included in the general government category and pension and financial institutions, the largest and second-largest debtors are the Korea Rail Network Authority and the Korea Rural Community Corporation, respectively contributing

57.6 percent and 19.7 percent of the total liabilities for the category.

<Table II-4> Liability Rankings of SOEs

(Unit: million won, %)

Ranking	Institution Name	2007	Proportion	Cumulative Proportion	2011	Proportion	Cumulative Proportion
1	Korea Land & Housing Corporation	66,908,862	49.3%	49.3%	130,516,338	46.4%	46.4%
2	Korea Electric Power Corporation	21,611,859	15.9%	65.3%	50,330,593	17.9%	64.3%
3	Korea Gas Corporation	8,743,644	6.4%	71.7%	26,860,898	9.6%	73.9%
4	Korea Expressway Corporation	17,830,249	13.1%	84.9%	24,571,087	8.7%	82.6%
5	Korea Water Resources Corporation	1,575,552	1.2%	86.0%	12,578,289	4.5%	87.1%
6	Korea National Oil Corporation	3,682,981	2.7%	88.7%	12,228,462	4.3%	91.4%
7	Korea Railroad Corporation	5,948,515	4.4%	93.1%	10,806,810	3.8%	95.3%
8	Incheon International Airport Corporation	3,940,229	2.9%	96.0%	2,974,277	1.1%	96.3%
9	Korea District Heating Corporation	1,279,359	0.9%	97.0%	2,797,580	1.0%	97.3%
10	Korea Resources Corporation	434,139	0.3%	97.3%	1,802,456	0.6%	98.0%
11	Busan Port Authority	345,522	0.3%	97.5%	1,430,335	0.5%	98.5%
12	Korea Coal Corporation	1,223,237	0.9%	98.4%	1,429,919	0.5%	99.0%
13	Korea Broadcast Advertising Corporation	726,464	0.5%	99.0%	815,204	0.3%	99.3%
14	Korea Appraisal Board	258,111	0.2%	99.2%	416,919	0.1%	99.4%
15	Jeju Free International City Development Center	64,815	0.0%	99.2%	357,338	0.1%	99.6%
16	Incheon Port Authority	34,418	0.0%	99.2%	314,852	0.1%	99.7%
17	Korea Airports Corporationa	242,713	0.2%	99.4%	307,754	0.1%	99.8%
18	Korea Racing Authority	374,946	0.3%	99.7%	263,589	0.1%	99.9%
19	Korea Tourism Organization	310,080	0.2%	99.9%	254,173	0.1%	100.0%
20	Korea Minting & Security Printing Corporation	93,805	0.1%	100.0%	78,081	0.0%	100.0%

Note: The Yeosu Gwangyang Port Authority, which is included in the general government sector, and the Korea Housing Guarantee Co., Ltd, which is a financial institution, were excluded as along with all subsidiaries.

4 International Comparison of Public Institutional Liabilities

There is a limit to comparing South Korea to other countries in terms of the size of the liabilities of public institutions due to the scope of public institutions being defined differently across countries. That being said, however, the U.K. shows the lowest rate of public institutional liabilities among the six OECD countries analyzed, estimated to be slightly over 8.7 percent of GDP.[5] The ratio of the liabilities of major public institutions to GDP in Finland is found to be 12.3 percent, but this figure is limited in that only 27 major public institutions managed by the Finnish government were included in the statistics. The ratio of the liabilities of 24 major federal crown corporations to GDP in Canada stands at 16.6 percent. Canada maintains 49 federal crown corporations, but this figure includes only those 24 corporations that submit financial reports. However, since these 24 are relatively large in size, the total would not be much different even including the liabilities of the remaining 25 corporations. As for South Korea, the liabilities of the Korea Land and Housing Corporation, the Korea Electric Power Corporation and the Korea Gas Corporation, which are among the largest debtors, account for 73.9 percent of the total liabilities of public institutions, and their ratio to GDP stands at 20.7 percent.

The ratio of the liabilities of public institutions to GDP in New Zealand exceeds 30 percent, but a considerable portion of these are already included in government liabilities. A large fraction is contributed by the liabilities of funds managed by public institutions and classified as among government liabilities and the remaining liabilities are projected to be quite small. Given that in this study the liabilities in fund accounts are not included as part of the total liabilities of public institutions in South Korea, it is inappropriate to simply compare the overall liabilities of Korean and New Zealand public institutions. Clearly, the liabilities of New Zealand public institutions would be smaller than those of Korean public institutions were the liabilities in fund accounts to be excluded.

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5) A relatively wide range, though not the whole, of public institutions were included. However, financial institutions into which public funds were injected in response to the global financial crises were excluded.

In the case of Sweden, based on the liabilities presented in the national annual report, the ratio of total public institution liabilities to GDP is particularly high at over 350 percent, but this is because the liabilities incurred by financial SOEs were all included. Estimating the figure after subtracting the liabilities of financial SOEs to allow a meaningful comparison with other countries, its SOE liability to GDP ratio drops to roughly 33 percent. Although this is still a markedly high figure, the Swedish government considers there to be no issue with future repayment of those liabilities as the bulk of them are held by market-based SOEs that are returning profits. The proportion of public institutions' liabilities to GDP in Sweden drops further to 9.3 percent when three highly commercial institutions are excluded. Meanwhile, the ratio of French public institutions' liabilities to the GDP of France was found to be 27.9 percent, closest to the level of South Korea among the countries analyzed.

Despite the constraints on international comparison, the following can be concluded about the size of South Korean public institutional liabilities. In terms of the portion of public institutional liabilities not included within government liabilities, among the six countries examined the amounts reported in the U.K., Finland, Canada and New Zealand are strikingly smaller than that of South Korea. While indicators show that Sweden's public institutional liability-to-GDP ratio is somewhat higher than that of South Korea, their liabilities are less problematic than those of Korean public institutions, since they are primarily made up of the liabilities of commercial SOEs. All in all, France is relatively similar to South Korea in terms of the size of public institution liabilities.

The total liabilities of public institutions in South Korea are deemed serious because the liabilities of those institutions that are not entirely commercial, for example, the Korea Land and Housing Corporation account for 46.4 percent of the liabilities of all public institutions. However, as opposed to with budgets, the need for managing the total amount is not especially high in the case of public institutions' liabilities, because different public institutions have unique sources of liabilities and their liabilities are not closely related to one another. In the next chapter, we will take the approach of perceiving public institutions as businesses and measuring the risk level of each institution.

III

Assessment and Estimation of the Liability Risk of SOEs

1 Assessment Criteria for SOE Liability Risk

This chapter defines liability risk of SOEs to be a state where SOEs have difficulty independently managing their liabilities and thus become a burden on national finances from the perspective of the government. It would therefore be preferable to limit the scope of liabilities for analysis to those financial liabilities that can be linked to national finance. In addition, since SOEs seek profits by their fundamental nature while they serve the public interest in parallel, the financial analysis methods employed by private firms are applicable to a great degree in the process of analyzing the risk surrounding SOEs' debt-repayment capacities.

The development of SOE liability risk indicators consists of defining risky items, defining areas of liability risk and financial indicators, defining warning signals for identifying potential risks, and determining risk ratings. Risk assessment is intended to evaluate SOEs' weaknesses in terms of repayment capacity. It begins with identifying risky items and ultimately aims to assign risk ratings to SOEs.

[Figure III-1] Procedure for Liability Risk Assessment of Public Institutions

<table>
<tr><td rowspan="2">Defining Risky Items</td><td colspan="2">Borrowings</td><td colspan="2">Bonds</td><td colspan="2">Other Interest-bearing Liabilities</td></tr>
<tr><td colspan="6">Collectively considered “financial liabilities”</td></tr>
<tr><td rowspan="2">Defining Risk Areas and Indicators</td><td colspan="2">Primary indicators</td><td colspan="2">Secondary dynamic indicators</td><td colspan="2">Secondary static indicators</td></tr>
<tr><td>Impaired capital</td><td>Interest coverage ratio</td><td>Change in total borrowings to total assets</td><td>Change in interest coverage ratio</td><td>Size and term structure of borrowings</td><td>Liquidity</td></tr>
<tr><td>Defining Warning Signals by Indicator</td><td colspan="6">Defining warning signals and thresholds</td></tr>
<tr><td rowspan="2">Determining Risk Ratings</td><td colspan="6">Defining integrated rules for risk measurement</td></tr>
<tr><td colspan="6">Assigning risk ratings of red, orange, yellow or white</td></tr>
</table>

SOE liability risk level refers to a level of liabilities that exceeds an SOE’s capacity to repay its long- and short-term debts, and it needs to be determined in relation to debt repayment capacity. Therefore, the liabilities to be assessed in estimating liability risk level are limited to those financial liabilities through which financing costs are incurred. “Liabilities” here refers to financial liabilities for which financing costs must be paid. The financial liabilities in question refer to borrowings, bonds (including both bonds with warrants and convertible bonds), and other interest-bearing liabilities.

For the measurement of SOE liability risk indicators, financial indicators able to diagnose the capacity of SOEs to repay financial liabilities should be used. We will define effective signals indicating liability risk by focusing on identifying indicators from the perspective of repayment capacity and examining actual cases of SOEs.

[Figure III-2] Method of Measuring Risk Indicators for Public Institutions' Liabilities

<table>
<tr><th colspan="5">Measurement Method of Risk Indicators</th><th>Measurement Results</th></tr>
<tr><td rowspan="3">Primary Indicator Filtering</td><td colspan="3">Primary indicators</td><td rowspan="3">Yes</td><td rowspan="3">Red</td></tr>
<tr><td colspan="3">Impaired capital or an interest coverage ratio of less than one for three consecutive years</td></tr>
<tr><td colspan="3">No</td></tr>
<tr><td rowspan="4">Secondary Indicator Filtering</td><td colspan="4">Secondary indicators</td><td>Orange</td></tr>
<tr><td>Dynamic rates</td><td colspan="3">Static rates</td><td></td></tr>
<tr><td rowspan="2">■ Rate of increase in total borrowings to total assets
■ Rate of decrease in interest coverage ratio</td><td>Profitability</td><td>Soundness in borrowings and term structure</td><td>Liquidity</td><td>Yellow</td></tr>
<tr><td>■ Interest coverage ratio over the last two years
■ Interest coverage ratio for the latest available year</td><td>■ Total borrowings to total assets
■ Weighted average maturity</td><td>■ Capacity for the repayment of short-term financial liabilities
■ Capacity for the repayment of short-term foreign currency borrowings</td><td>White</td></tr>
</table>

<Table III-1> Financial Indicators Used to Derive Indicators for the Measurement of SOE Liability Risk

Classification		Financial Indicators	Details
Primary Indicators	Repayment capacity	Impaired capital	Negative own equity capital on financial statements
		Interest coverage ratio	Operating profits divided by interest expenses
Secondary Indicators	Dynamic indicators	Rate of increase in total borrowings to total assets	Average annual increase in total borrowings to total assets over the past three years
		Rate of decrease in interest coverage ratio	Average annual decrease in interest coverage ratio over the past three years
	Static indicators	Total borrowings to total assets	Total borrowings divided by total assets
		Soundness in term structure	Weighted average maturity
		Capacity for the repayment of short-term borrowings	(EBITDA plus cash equivalents) divided by short-term financial liabilities
		Foreign currency liquidity	(EBITDA plus cash equivalents) divided by short-term foreign currency financial liabilities

Due to the unique characteristics of the industries to which SOEs belong, it is at times difficult to apply uniform risk thresholds to financial indicators. An example found among the liability risk indicators defined above is "total borrowings to total assets." In order to reflect the characteristics of the industries to which SOEs pertain within the risk thresholds of each financial indicator, we analyzed the financial ratios of large private corporations operating in similar industrial categories to the SOEs in question as a means to discover how they differ from the typical financial ratios of their respective industries. These difference levels per industry were accounted for in adjusting the risk threshold to reflect the characteristics of the industry in which the relevant SOE operates. For the figures on domestic for-profit corporations in similar industries, data regarding large corporations published by the Bank of Korea Economic Statistics System were used. However, when the characteristics of large

corporations functioning within an industry that was classified as an allied industry differ from those of the relevant SOE, the financial ratios of industrial categories similar to the industry to which the relevant SOE belongs were analyzed and used. Industries in the Bank of Korea Economic Statistics System were grouped based on the 9th Korean Standard Industrial Classification, which has been in use since February 2008.

Final SOE liability risk status is classified into "red" (high risk), "orange" (risk), "yellow" (caution required), and "white" (safe) based on financial stability. The risk ratings for each liability risk area are calculated according to the criteria below.

Red (high risk): The state where a financial risk signal indicates that repayment through the SOE's individual efforts is impossible.

Orange (risk): The state where a significant financial risk signal raises doubts regarding the SOE's debt repayment capacity.

Yellow (caution required): The state where a financial risk signal is observed, though not at a critical level, regarding repayment capacity and thus particular caution is merited.

White (safe): The state where no financial risk signal regarding repayment capacity is evident.

<Table III-2> Risk Ratings by Financial Warning Signal

Indicator Classification		Risk Rating	Conditions
Primary Indicators		Red	When either ① or ② applies ① There is capital impairment. ② The interest coverage ratio over the last three years is below 100%.
		Orange	The interest coverage ratio over the last two years is below 100%.
		Yellow	The interest coverage ratio for the preceding year is below 100%.
Secondary Dynamic Indicators		Yellow	When either ① or ② applies ① The ratio of total borrowings to total assets over the last three years increased by an annual average of 20% or more and the interest coverage ratio over the last three years decreased by an annual average of 10% or more. ② The interest coverage ratio over the last three years decreased by an annual average of 20% or more.
Secondary Static Indicators	Total borrowings to total assets and term structure	Orange	When both ① and ② apply ① The ratio of total borrowings to total assets exceeds 30%.* ② The weighted average maturity is less than three years. * Industry adjustments reflected.
		Yellow	The ratio of total borrowings to total assets exceeds 30%.* * Industry adjustments reflected.
	Capacity for repayment of short-term borrowings	Orange	When the rate of short-term financial liabilities against (cash equivalents plus EBITDA) is less than 50%.
		Yellow	When the rate of short-term financial liabilities against (cash equivalents plus EBITDA) is at least 50% but less than 100%.
	Foreign currency liquidity	Yellow	When the rate of short-term foreign currency borrowings against (cash equivalents plus EBITDA) is less than 85%.

<Table III-3> Method of Estimating Overall Liability Risk

Risk Rating	Conditions
Red	The result of primary indicator filtering is red.
Orange	The result of primary indicator filtering is not red and there is at least one risk value indicating orange.
Yellow	The result is neither red nor orange nor white.
White	There are no signals indicating red, orange or yellow.

2 Results of Liability Risk Diagnosis

Judging from current financial structures, the institution in the most serious condition among all SOEs examined is the Korea Coal Corporation, due to its impaired capital. However, the liabilities of the corporation are 1.4 trillion won, accounting for a mere 0.5 percent of the composite liabilities of all public institutions. While it demonstrates the highest risk as an individual enterprise, the minimal scale of the liabilities involved does not entail any danger at the national economic level. This accentuates the need for increased attention being paid to institutions which have both a high financial risk and liabilities of considerable size and are thus more likely to impact the national economy. The top seven SOEs in terms of size of liabilities as of 2011 are the Korea Land and Housing Corporation, the Korea Electric Power Corporation, the Korea Gas Corporation, the Korea Expressway Corporation, the Korea Water Resources Corporation, the Korea National Oil Corporation and the Korea Railroad Corporation, the combined liabilities of which account for 95.3 percent of total public institutional liabilities.

<Table III-4> Summary of the Result

Risk Rating	SOE
Red	Korea Coal Co. KEPCO, KORAIL
Orange	KOGAS, KNOC, Korea Resource Co, LH

This study identifies the Korea Electric Power Corporation as the institution at greatest financial risk. This may appear somewhat surprising since the total liabilities of the corporation, standing at 50.3 trillion won, are far smaller than those of the Korea Land and Housing Corporation at 130.5 trillion won. However, the former shows an interest coverage ratio of negative 212 percent as it has operated in the red, a structure that is compelling it to engage in additional borrowing to make good on its financial commitments. Moreover, it has maintained a negative interest coverage ratio since 2008, indicating a solidification of its operating deficits. In contrast, the Korea Land and Housing Corporation is maintaining an interest coverage ratio of 610 percent, which means it has been paying off liabilities through operating profits. Thus, it can be concluded that despite the greater liabilities of the Korea Land and Housing Corporation, the Korea Electric Power Corporation faces a greater liability risk in terms of cash flow.

Although rated as yellow by its current financial indicators, the Korea Railroad Corporation should in fact be considered to fall under the category of red. With the Korean equivalents of the International Financial Reporting Standards (K-IFRS) being introduced, the corporation enjoyed the luck of having its gain on disposition of other non-current assets, which was formerly classified as non-operating revenue, appropriated as an operating profit of 1.3-1.4 trillion won annually for the period of 2010-2011. However, profits from the disposal of assets cannot be assumed to continue for an extended period. Its operating profits are expected to switch to a deficit within the next few years, and if such is the case, the corporation will be placed into the red category according to the criteria of this study.

The financial status of an SOE is determined to be red on the basis of a minimal capacity for loan repayment (interest coverage ratio), the cause of which is identifiable as a deficit in operating profits. The Korea Electric Power Corporation and the Korea Coal Corporation suffered from chronic operating deficits, while the Korea Railroad Corporation was expected to eventually transition to deficit from a temporary operating surplus gained through asset sales. These SOEs find themselves facing conditions under which they are not even able to repay interest due with their profits and are

thus compelled to take out loans to repay existing loans.

Institutions identified as belonging to the orange category include the Korea Land and Housing Corporation, the Korea Gas Corporation, the Korea National Oil Corporation and the Korea Resources Corporation. It is noteworthy that the Korea Land and Housing Corporation, with liabilities accounting for 41.6 percent of total public institutional liabilities, was assigned to the orange category rather than red. This is due to the corporation generating a surplus from its operations and recording a net profit over consecutive periods, while its debt repayment capacity has also steadily improved since the 2010 introduction of a business turnaround plan. As a result, its interest coverage ratio amounts to 610 percent, the highest level among the seven largest debtor SOEs. Also taken into account was the fact that its term structure of borrowings includes well-distributed long-term maturities and that the policy-based funds (borrowings from National Housing Fund, etc.) which actually correspond to roughly one-third of total borrowings impose a relatively low burden of repayment in practice, alleviating liquidity risks. However, it should be emphasized that the financial structure of the Korea Land and Housing Corporation remains risky and requires continued management.

It is also worthy of special mention that the SOEs leading efforts to develop overseas resources, namely the Korea Gas Corporation, the Korea National Oil Corporation and the Korea Resources Corporation, were all classified as falling into the category of orange. Now is the time for an in-depth examination of the allocation of responsibilities for future overseas resources development between the government, SOEs and the private sector. These three SOEs were graded orange because their capacity for repayment of short-term financial liabilities was found to be below 50 percent due to a lack of liquidity. Therefore, special attention needs to be directed at the liquidity of these resource-related SOEs. In particular, as the Korea National Oil Corporation and the Korea Resources Corporation were assessed as belonging to the yellow category because of their lack of financial resources for short-term foreign-currency borrowings, it is necessary for them to properly manage their foreign currency liquidity.

Finally, the Korea Water Resources Corporation and the Korea Expressway Corporation were both classified within the yellow range. They

landed in yellow instead of white due to their heavy reliance on borrowings, but avoided the orange category thanks to their relatively low levels of short-term liabilities. In sum, it can be concluded that the former should direct more attention to the total size of borrowings and the latter to short-term financial liabilities.

IV

Analysis of Causes of Liabilities

1 Korea Expressway Corporation

1) Liability Status

Mainly responsible for road construction and management, the Korea Expressway Corporation (EX) is among the group of SOEs with copious liabilities due to its large-scale construction investments. Major expressway construction projects are financed through investments and own revenues, and the company usually covers 50 percent[6] of construction expenses and the full amount of land costs.

The total liabilities of EX amounted to 24.6 trillion won as of the end of 2011. It maintained its total liabilities at a low level compared to total assets in the past, but the liability amount has climbed to a level approaching that of total assets. The liability growth rate from 2005 to

6) There are no separate regulations regarding the proportion of government investment in construction expenses, and commonly 50 percent of construction expenses were funded through government investments. However, with additional investments funded through EX's issuance of asset-backed securities (ABS) since 2009, the proportion of government subsidy fell below 40 percent.

2009 was around 8 percent on average, with a peak growth rate of 13.34 percent recorded in 2008. Although the liability growth rate has gradually slowed since 2010, it still remains around 3-4 percent. In particular, with the introduction of IFRS in 2010, EX's liabilities have increased by approximately 900 billion won. However, even after the switch to new standards, its overall liability growth rate has been maintained without significant change.

2) Analysis of Causes of Liabilities

The primary reason for the increase in EX's liabilities is the expansion of construction investments made as a form of policy support. As a component of efforts to stimulate the economy, the Korean government decided to undertake, through EX, additional investments on top of existing investment in expressway construction, directing the SOE to secure the funds required for investment expansion. Following the results of the Economic Ministers' Meeting in 2004, EX made a total additional investment of 6.05 trillion won over the 2005-2010 period by issuing asset-backed securities using expressway operating rights as collateral.

<Table IV-1> Status of Additional Investments

(Unit: trillion won)

Classification	Total	2005-2006	2007	2008	2009	2010
Planned	5.0	2.0	1.0	0.8	0.6	0.6
Actual	6.05	2.0	1.0	1.0	1.05	1.0

Source: Comprehensive liability management program by the Korea Expressway Corporation (2010)

The share of government subsidies has also been declining, but this is not a source of liabilities per se. If newly constructed expressways are sufficiently profitable, it is highly likely that the construction investment will be recovered even though the share of government subsidy is low. Recently, however, highly profitable expressway segments have tended to be constructed by means of attracting private capital. EX is more often relegated to the construction of roadway segments that are components

of less lucrative policy projects, and the consequent decline in profitability has served as a crucial factor in liability accumulation. Since it is not the case that additional government subsidies are provided to less-lucrative segments, the greater the proportion of unprofitable segments among the total expressways constructed by EX, the less profitable its overall body of expressways inevitably becomes.

Meanwhile, EX's largest source of revenue stems from toll collection. Tolls were raised every other year from 2002 to 2006, but have since been maintained at a stable level through the regulation of public utility rates. Toll revenue has steadily increased since 2006 due to an increase in road extensions and traffic volume. Traffic volume tends to grow in proportion to an increase in road extensions. However, in contrast to the increased traffic volume, toll revenue per vehicle has decreased, with a particularly sharp drop in 2007 when the toll freeze began to be implemented.

2 Korea Gas Corporation

1) Liability Status

As of the end of 2011, the total liabilities of the Korea Gas Corporation (KOGAS) were reported to be 26.9 trillion won. The volume of assets, liabilities and capital of KOGAS from 2006 to 2011 are presented in <Table IV-2> below. Its total liabilities remained around 8.7 trillion won during the 2006-2007 period, but surged by 104.3 percent to 17.8 trillion won just in the single year of 2008. The incline appeared to slow before recording another surge of 25.4 percent over the previous year in 2011, signaling a returning upward trend. Total capital has steadily increased as well, but its growth has failed to keep up with the rise in combined liabilities. For the period from 2006 to 2010, KOGAS's capital grew by 1.5 times while its liabilities more than doubled.

<Table IV-2> Assets, Liabilities and Capital (As of late 2011)

(Unit: 100 million won)

Classification	2006	2007	2008	2009	2010	2010 (IFRS)	2011 (IFRS)
Assets	122,483	125,805	219,430	229,335	242,924	300,248	360,105
Liabilities	87,296	87,436	178,645	177,723	189,955	222,946	279,666
Capital	35,187	38,369	40,785	51,612	52,969	773,018	804,390

Source: ALIO

The liability ratio of the company increased a whopping 438 percent in 2008, the year of a sharp increase in liabilities, but this liability increase was not accompanied by corresponding capital growth. Although the liability ratio abated to roughly 350 percent in 2009 and 2010, this remains a lofty figure compared to the years prior to 2007. After the introduction of IFRS, KOGAS's liability ratio was figured as rather lower. The ratio of 2010, for example, stood at 288.41 percent under IFRS, down from 358.6 percent recorded prior to the adoption of the new standards. However, the volume of liabilities climbed at a rapid pace once again in 2011, and thus the liability ratio also increased by 59.3 percentage points over 2010.

2) Analysis of Causes of the Increase in Liabilities

The largest portion of the total liabilities of KOGAS consists of capital expenditures at home and abroad and the working capital required for financing of increased capital investment. The table below breaks down its total liabilities on an accrual basis. The liabilities resulting from domestic capital investment and overseas resources development are 8.7 trillion won and 3.2 trillion won, respectively, indicating that approximately 44.6 percent (11.9 trillion won) of the total liabilities of 26.7 trillion won are due to domestic and foreign capital expenditures. Adding the 7.5 trillion won liability incurred by the increase in working capital which is entailed by capital investment, the proportion rises further to 72.7 percent.

<Table IV-3> Causes of Liabilities

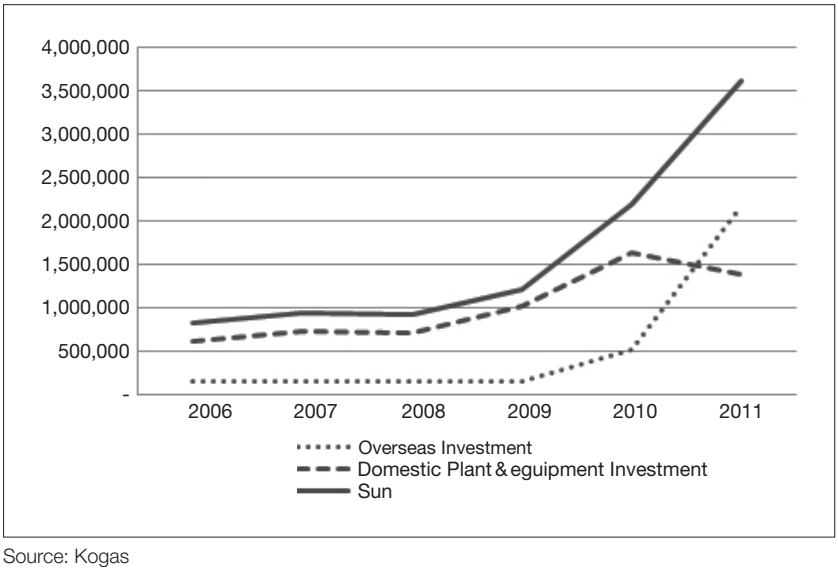
Classification	Amount
Accounts receivable	4.4 trillion won
Domestic capital investment	8.7 trillion won
Overseas resources development	3.2 trillion won
Financial lease liabilities	3.1 trillion won
Working capital	7.5 trillion won
Total	26.7 trillion won

Source: Korea Gas Corporation

Capital investment can be divided once again between domestic capital investment and foreign capital investment. The following graph presents changes in the amount of total capital investment including domestic capital and foreign capital investments from 2006 to 2012. It can be seen that total investment by KOGAS began to soar in 2010, presumably due to the expansion of foreign investment. The company's foreign investment grew rapidly in 2010 and 2011, and even exceeded the volume of domestic capital investment in the latter year. Considering the sharp increase in total liabilities in 2010 and 2011, it becomes clear that the reason behind this lies particularly in the inward wave of foreign investment. As for investment in overseas facilities, the volatility of return is high and it may take some time to generate returns, leading to greater variability in return on investment. However, the rate of return on foreign equity investment peaked in 2005 and has since declined steadily. After 2008, when overseas investment sharply expanded and the size of liabilities also began to similarly increase, the rate of return on foreign equity investment hit the lowest point recorded over the last ten years. Therefore, we need to make a close examination of whether these investments in overseas assets were made even though its profitability had not been verified.

[Figure IV-1] Investment Trend

(Unit: million won)



Source: Kogas

3 Korea Railroad Corporation

1) Liability Status

The total liabilities of the Korean Railroad Corporation (KORAIL) stood at 13.5 trillion won in 2011. The amount of its liabilities has steadily increased since 2006, however, its increase rate rose sharply from 2009. Liabilities were maintained at levels lower than those of equity capital until 2010, but with a decline in capital and an increase in liabilities under IFRS, the volume of its liabilities has once again exceeded that of equity capital. <Table IV-4> shows that no notable change in the liability growth rate has occurred since the introduction of IFRS.

<Table IV-4> Sizes of Assets, Liabilities and Capital (As of late 2011)

(Unit: 100 million won)

Classification	2006	2007	2008	2009	2010	2010 (IFRS)	2011 (IFRS)
Assets	137,646	142,137	160,075	186,110	198,123	210,473	221,792
Liabilities	56,157	59,485	67,963	87,547	96,580	126,236	134,562
Capital	81,489	82,652	92,112	98,563	101,543	84,237	87,230

Source: ALIO

Its debt-to-equity ratio climbed by two to three percentage points per year with 68.92 percent in 2006, 71.97 percent in 2007 and 73.78 percent in 2008, but reached 88.82 percent with the surge of 15.04 percentage points over the previous year's figure in 2009 when the size of liabilities expanded substantially. The increase in the debt ratio in 2010 was 6.29 percentage points and, based on IFRS standards, that of 2011 was 4.4 percentage points, indicating that the rate of debt has increased much faster compared to the levels seen prior to 2008. As shown in the above table, liabilities exceeded equity capital following the adoption of IFRS, sending the debt-to-equity ratio up above 100 percent since 2010.

2) Analysis of Causes of the Increase in Liabilities

In the case of KORAIL, chronic deficit operation has served as a central factor in the deterioration of its financial stability. During the period of 2006 to 2010, prior to the adoption of IFRS, the ratio of KORAIL's operating profit to net sales showed a negative relation. The ratio plunged to minus 20.3 percent in 2008 and remained at a very low level until 2010, although the overall deficit was in fact reduced. For 2010 and 2011, after IFRS were implemented in South Korea, the ratio showed a positive figure as a result of the use of different accounting methods.

However, it is unreasonable to compare operating profits under IFRS and non-IFRS systems on a one-to-one basis. This is because under IFRS, the operating profit is calculated by deducting selling, general and administrative expenses (SG&A) from gross profit, although the financial

statement required by IFRS retains an operating profit account.[7] Therefore, it is necessary to adjust the operating profit to fit a similar account created by the former accounting criteria before comparing operating profits. The continued negative trend in KORAIL's ratio of operating profit to net sales indicates that it has recorded deficits even after 2010.

Therefore, unless KORAIL improves its long-term profitability, it appears that it will be challenging for KORAIL to enhance its financial soundness under conditions of increasing liabilities. According to a management performance evaluation report, KORAIL is focusing on the reform of its cost and earnings structures in an attempt to reduce the operating deficit as part of measures to improve its financial structure. Unlike EX and KOGAS whose liabilities were accumulated through construction investments, KORAIL shows a clear distinction accumulating its debt through a continuing deterioration in management performance.

The ratio of gross earnings to costs recorded its lowest level in the transportation business of KORAIL and the revenue from this sector accounts for the largest proportion of its total earnings, thereby lowering the earnings to costs of the corporation as a whole. The causes of the deficit in the operating balance can be explored through its dual aspects of costs and revenue. On the revenue side, debt accumulation is largely attributable to low profits stemming from the operation of railroad lines at a deficit. As the decision to operate a particular railroad line is made by the Ministry of Land, Infrastructure, and Transport, it becomes difficult to generate revenue from unprofitable lines, the operation of which is provided as a public service in pursuit of civic purpose. In addition, KORAIL has been bearing the burden of a deficit which is being generated by certain stations operating in response to the demands of local governments.

On the cost side, track access charges and personnel expenses can be identified. Track access charges are an expense disbursed by KORAIL, the operator of railroads, to their owner, the government. The corporation is required to defray 31 percent of operating earnings on high-speed railways and 70 percent of the operation and maintenance costs of general

7) This is because a portion of what belonged to the non-operating income account prior to the adoption of IFRS is included in the operating income on the financial statements under IFRS.

railways to the Korea Rail Network Authority, an affiliated organization of the Ministry of Land, Infrastructure, and Transport, and remitted a total of 709.8 billion won for track access last year. This charge is set regardless of the profitability of a given railroad line, so when profits derived from railroad lines in surplus are insufficient to cover the charges on lines in deficit, an operating loss occurs. If this operating loss accumulates to an excessive degree, it leads to an increase in debt. In addition, personnel expenses account for a very large proportion of the sales cost of KORAIL. Labor productivity at KORAIL is remarkably low due to excessive personnel expenses compared to all other public institutions. According to the results of previous studies,[8] the real labor productivity of overall public institutions stood at 2.29 in 2010, while that of KORAIL recorded a mere 0.42.

4 Korea Electric Power Corporation

1) Liability Status

The major functions served by the Korea Electric Power Corporation (KEPCO) consist of the development of electric power resources, power generation, transmission, transformation and distribution of electric power, as well as related sales and business. Its consolidated financial statements, including liabilities of subsidiaries, showed that KEPCO's liabilities stood at 82.7 trillion won, while its separate financial statements identified 50.3 trillion won, which is the second largest in terms of liabilities among all public institutions. We cannot observe any remarkable change in the liabilities of KEPCO from 2001, but as its profitability deteriorated after 2008, its liabilities and their ratio began to increase sharply. While its capital has not grown noticeably since 2006, the assets and liabilities of the corporation continued to increase from 2006 to 2011. In addition, the shift in the application of accounting standards has resulted in a considerable

8) Comparative Analysis of Labor Productivity Among State-owned Enterprises (2011, Korea Institute of Public Finance)

change in the estimated size of the corporation's liabilities.

The adoption of IFRS in 2010 produced a dramatic shift in the calculation of assets, capital and liabilities at KEPCO. When the 2010 financial data produced by applying both the previous and current accounting standards, K-GAPP and IFRS, are compared, there is a considerable difference even within the same financial data depending on the standard used. KEPCO's consolidated financial statements showed a difference of more than double the liabilities when both K-GAAP and IFRS were applied, with 33 trillion won and 72 trillion won, respectively. The data from KEPCO's subsidiaries, the Korea Hydro & Nuclear Power Co., Ltd. and five electricity generating subsidiaries, are included in the consolidated financial statements. On the other hand, liabilities for 2010 listed in KEPCO's separate financial statements stood at 33 trillion won under K-GAAP, but 44 trillion won under IFRS. This disparity of more than 33 percent also demonstrates that the volume of liabilities differed greatly according to the standard applied.

As seen above, KEPCO's financial statements have been greatly impacted by the application of IFRS as a new accounting standard, and therefore in comparing pre-2010 data based on K-GAAP and post-2010 data based on IFRS, such a consideration must be taken into account. Furthermore, in order to analyze the causes of changes in the size of the liabilities of KEPCO, it is necessary to understand this discrepancy resulting from application of the new standards.

Even considering the factor of the adoption of IFRS, the corporation's liabilities have been constantly trending up since 2010. They increased from 72 to 82 trillion won in 2010 based on its consolidated financial statements, and also showed a growth from 44 trillion won to 50 trillion won on the separated statements. This continued expansion of its liabilities has led to the erosion of KEPCO's financial soundness and its credit ratings. In 2012, Moody's and Standard & Poor's downgraded the corporation's credit rating,[9)] which caused it to be eliminated from the pre-qualification process for participation in the bidding for the construction of coal

9) Moody's downgraded its rating from A2 to Baa2, while Standard & Poor's dropped from A- to BBB.

thermal power plants in Indonesia and combined cycle power plants at Dairut, Egypt. Its undermined financial situation has also made it difficult to pursue new investments.

2) Analysis of Causes of the Increase in Liabilities

KEPCO has an income structure rooted in its own net income and operates its business based on its proprietary income, with the exception of a one-time government subsidy issued in 2008. The vast bulk of its sales are generated by selling electricity, which accounted for 99 percent of its own income in 2008 and 96 percent in 2011. Therefore, this income structure is characterized by the total income and volume of sales being greatly impacted by fluctuations in electricity rates.

The sales volume of electricity and the resulting income have both doubled since 2000, and so has the size of KEPCO. A closer look into the growth trend, however, shows that electricity rates have been maintained without notable change. The income from electricity sales per gigawatt-hour was 89.32 million won in 2011, a modest increase of 20 percent over 11 years from 74.65 million won in 2000. This indicates that electricity rates have remained at a low level considering inflation and the increase in oil prices over the period.

KEPCO's liabilities have climbed rapidly since 2007. The largest contributor to the ascent is imbalance between the increase rates of the unit cost of purchasing electricity and electricity rates. While the unit cost of purchasing electricity rose sharply due to a surge in the cost of fuel, the corresponding increase in electricity rates, which were curbed by the government's control policy, fell short of covering the escalation in the fuel costs. Since 2007, electricity fees have been raised every year, and the increase has generally been large in electricity prices for industrial, off-peak and educational use. However, the general rate of increase has been approximately 3.5-4.9 percent on a yearly basis and does not sufficiently reflect the increases in fuel costs, due to the government's control of public utility rates as part of their efforts to stabilize the price level. Electricity prices for industrial and household consumers were raised by 6.1 percent and 2 percent, respectively in July 2011, and industrial electricity prices

alone were raised by an additional 6.5 percent in December 2011. The cost recovery rate of electricity rates stood close to 100 percent from 2001 to 2005, declined to a bottom of 78 percent in 2008 before climbing back to 87.4 percent in 2011.

Electricity in South Korea is mainly produced by using other sources of energy such as oil and natural gas, but its prices are maintained at lower levels than other fuels due to electricity price-restriction policies, contributing to an increase in annual electricity consumption. In order to meet this demand, the facilities necessary to generate electricity are continuously being expanded. As long as electricity prices are set at lower levels than costs, however, the increased production and sales of electricity will inevitably lead only to mounting debt for KEPCO. However, a cautious analysis is needed considering a wide range of factors, including income distribution, regarding a system for electricity charges that would be desirable to solve KEPCO's debt issues.

5 Korea Land and Housing Corporation

1) Liability Status

The Korea Land and Housing Corporation (LH) was founded in 2009 through a consolidation of the Korea Land Corporation and the Korea Housing Corporation. Its liabilities totaled 13.05 billion won as of 2011, the single largest indebted institution among Korean public institutions. This figure corresponds to 28 percent of the total liabilities of 463.5 trillion won born by all public institutions, and 41 percent of the combined debt of all SOEs of 329.5 trillion won. Both the assets and liabilities assumed by LH have expanded greatly since 2004, with its assets reaching 158 trillion won in 2011 from 66 trillion won in 2006 and liabilities 130.6 trillion won in 2011 from 50 trillion won in 2006. In addition to the expansive scale of LH's liabilities, its rapid growth rate raised concerns related to the soaring of its debt ratio to 560 percent in 2010 from 332 percent in 2006, but the increase rate declined to a more modest 7 percentage points from 2010 to 2011. The debt ratio dropped from 559 percent to 461 percent in 2010 as a

result of the application of IFRS, but it still remains at an elevated level.

With the adoption of IFRS in 2010, the re-evaluation of land for rental housing increased LH's equity capital, and 76.72 billion won of seasoned equity offerings improved its financial structure. What emerged as a matter for concern were loans: total loans increased to 89.774 trillion won as of the end of 2011 and the cause underlying such increase was rooted in the growth in inventory assets arising from the purchase of land for implementing national policy-based programs including land development for new cities and the construction of the administrative center Sejong City and innovation cities, all of which pressured operating capital. As financial liabilities have increased since 2006, the dependence on loans has increased apace. The ratio of LH's total borrowings to total assets increased to 61 percent in 2010 from 48 percent in 2007, but fell by approximately 0.5 percent over the period from 2010 to 2011. Nevertheless, LH's reliance on borrowing remains very high compared to that of other SOEs.

A comprehensive analysis of LH's financial situation reveals that the structure of its liabilities remains risky due to their enormous scale and consistent rise, while the risk of short-term debt redemption is in decline with the ratio of current liabilities decreasing. However, the quick ratio has also fallen, undermining the corporation's short-term debt redemption ability. In addition, as the ratio of current liabilities has switched over to an upward trend since 2010, it is necessary to pay closer attention to the short-term risk faced by LH. As a result of examining the long-term risks of its liabilities, it becomes clear that the corporation will not easily be able to improve its liability structure in the short term through its own income structure because its profitability is not high.

2) Analysis of Causes of the Increase in Liabilities

The major source of liabilities assumed by LH is the fact that the corporation carries out large-scale governmental programs in a short time scale but finances the bulk of them with liabilities. Major policy programs undertaken by LH since the Kim Dae-jung government include national rental housing (64.6 trillion won), new-town development (92.2 trillion won), the Bogeumjari housing program for providing affordable housing

(105 trillion won) and other long-term programs scheduled for completion by as late as 2030. The combined expense of these programs approaches 323 trillion won. Financial assistance from the government stands at 33.9 trillion won, or a mere 10.5 percent of the entire program expenditure. In particular, the rapid expansion of rental housing programs with a vicious revenue structure where losses grow as the programs progress, as well as a series of massive policy programs in which large-scale new investments were made — such as the Bogeumjari housing program, the Sejong City project and a development program for innovation towns — were main contributors to the upsurge in LH's liabilities over a brief period.

In addition, the sales prices of houses and land, LH's main products, are difficult to adjust at will due to governmental price stabilization policies. The amendment to the Housing Act in January 2005 prescribes that the sales prices of houses of less than 85 square meters within an exclusive residential area in a public housing site should be determined within a ceiling range by having the sales prices indexed to expenses for construction and land. This provision has been applied widely from February 2006. Such regulations on prices generally curtail a considerable portion of development gains. LH's profitability tends to be further reduced because it is disallowed from reflecting the increasing cost of construction arising from the establishment of arterial facilities and an expansion of the green space ratio in housing land development demanded by local authorities. On the other hand, restriction of prices would lead to an increase in unsold homes at the time of a real estate market slump by making the corporation unable to flexibly cope with the real estate business cycle.

6 Korea Water Resources Corporation

1) Liability Status

The businesses in which the Korea Water Resources Corporation (K-water) is engaged can be largely divided between water services, operation and management of dams, industrial complex projects and development of water resources. K-water's assets and liabilities had

remained relatively stable, but as the corporation turned to carrying out the Four Major Rivers Restoration Project, the Gyeong-In Ara Waterway Project, and the national industrial complex projects, its assets and liabilities expanded significantly. K-water's liabilities, which stood at 1.6 trillion won in 2007, rapidly coursed to 12.6 trillion won in 2011, an approximately seven-fold increase over four years. Its assets increased to 23 trillion won in 2011 from 11 trillion won in 2007, which indicates that the swollen assets are mostly attributable to liabilities. The ratio of liabilities, which had remained at 19-percent levels until 2008, skyrocketed to 75.6 percent in 2010, followed by an increase of 40 percentage points after 2010 to reach 116 percent in 2011. This demonstrates that K-water, once characterized by a remarkably stable financial structure, has now come to retain liabilities exceeding equity capital through an enormous expansion of business and investments. The volume of financial liabilities grew from 10 trillion won in 2006 to 11 trillion won in 2011, which signifies that the majority of liabilities resulted from expanded financial liabilities. Therefore, the ratio of financial liabilities soared to 90.5 percent in 2011 from 60 percent in 2006, a sharp increase of 30 percentage points.

2) Analysis of Causes of the Increase in Liabilities

The major reason for the steep rise in K-water's liabilities since 2008 can be found in the fact that as the corporation has focused intently since 2009 on conducting massive national projects such as the Four Major Rivers Restoration Project, the Gyeong-In Ara Waterway Project, and national industrial complex projects, it has mainly financed them through liabilities. The total cost of the Four Major Rivers Restoration Project was funded by issuing bonds, and the bulk of the expenses incurred on the projects related to the Gyeong-In Ara Waterway and national industrial complexes were met by borrowing funds from financial institutions, leading its financial liabilities to swell to 11.3 trillion won in 2011 from one trillion won in 2007. As shown in the <Table IV-5>, liabilities by business indicate that out of the total liabilities of 12.6 trillion won in 2011, the Four Major Rivers Restoration Project accounted for 51 percent, or 6.4 trillion won, followed by 23 percent, or 2.8 trillion won for industrial complex projects, and 19

percent, or 2.4 trillion won resulting out of the Gyeong-In Ara Waterway Project. These three projects comprise 93 percent of its total liabilities.

<Table IV-5> Debt Ratio by Projects of K-Water

(Unit: million 100 won, %)

	2007	2008	2009	2010 (K-GAAP)	2010 (K-IFRS)	2011
Liability(A)	1,575,552	1,962,287	2,995,639	7,960,714	8,084,708	12,578,289
Industrial complexes	*1,064,103*	*1,121,025*	*1,487,414*	*2,297,054*	*2,300,434*	*2,836,379*
4 River Projects	-	-	*119,140*	*3,102,773*	*3,106,951*	*6,415,720*
Ara Waterway	-	-	*138,466*	*1,072,167*	*1,073,888*	*2,416,202*
Others (Dam, Water Supply)	*511,449*	*841,262*	*1,250,619*	*1,488,720*	*1,603,435*	*909,988*
Capital(B)	9,868,298	10,019,448	10,281,431	10,523,710	10,549,062	10,839,524
Debt Ratio (A/B)	16.0	19.6	29.1	75.6	76.6	116.0
Industrial Complexes	*10.8*	*11.2*	*14.5*	*21.8*	*21.8*	*26.1*
4 River Projects	-	-	*1.1*	*29.5*	*29.4*	*59.2*
Ara Waterway	-	-	*1.3*	*10.2*	*10.2*	*22.3*
Others (Dam, Water Supply)	*5.2*	*8.4*	*12.2*	*14.1*	*15.2*	*8.4*

Source: K-Water

In the meantime, just like other public utility charges, the rates for wholesale water, such as the water supplied by multi-purpose dams and wide-area water supply, are basically set at a uniform price nationwide. In other words, all local water suppliers pay as retailers the same rate to K-water, the wholesaler. The current costing system for water supply from multi-purpose dams and for multi-regional water supply is based on the full-cost pricing principle composed of appropriate costs that make up for accrued expenses and a rate of return that offsets capital expenses. Wholesale water rates were frozen since 2007 by government policy on public utilities until January of 2013. Even though the average rates rose by 4.9 percent, they still fall short of the full cost by approximately 17%, serving as another factor undermining K-water's financial structure.

7 Results of Analyzing Sources of Public Institutions' Liabilities

The main causes of increased liabilities can be summarized into three factors: pursuit of policy programs, regulations on charges and inefficiency in managing public institutions. The first two sources are shared almost without exception by all SOEs with substantial liabilities. Policy programs are pushed ahead out of governmental need, regardless of SOE intentions, and therefore the primary responsibility for these programs lies with the government. Price controls are similarly imposed by the government. In this regard, most of the liabilities assumed by SOEs are owing to government policies. Liabilities arising from policy programs are generally generated by the government projects that should properly be conducted through government finance. However, the projects are handed over onto SOEs instead for the purpose of maintaining the government's fiscal stability. On the other hand, liabilities triggered by rate regulation are created because a portion of the due payment users should assume is subsidized by SOEs under the objective of stabilizing price levels. In sum, SOE liabilities are generated by the passing over onto SOEs of government costs and the proper sums people should be directly paying.

<Table IV-6> Main Causes of Liabilities

	Policy Programs	Rate Regulation	Costs	Contents of Policy Programs
LH	◎	○		Bogeumjari housing, rental housing, innovation cities
KEPCO		◎		
KOGAS	◎	◎		Overseas resources development
KOEX	◎	○		Construction of roads with low profitability
K-water	◎	○		Four Major Rivers Restoration Project, Gyeong-In Ara Waterway
KNOC	◎			Overseas resources development
KORAIL	◎		◎	Maintenance of railroad lines in a deficit, investments in facilities

Note: Major factor ◎, minor factor ○

The liabilities of LH, KOGAS, EX and K-water are caused by a distinct pattern of policy programs in combination with price regulation. The major factors behind the liabilities of LH are found in policy programs such as the Bogeumjari housing, rental housing and innovation cities, as well as restriction on sales prices of houses. Massive policy projects such as the Four Major Rivers Restoration and Gyeong-In Ara Waterway were main contributors to K-water's liabilities, and price freezes on water supply and utilization also played a role in their increase. EX's liabilities mounted rapidly in the wake of the government's decision to fund the construction of highways with low projected profits through the corporation's liabilities, especially in combination with the fixed rate of highway tolls. The liabilities of KOGAS can mostly be explained by its investments in domestic and foreign facilities, in particular its expansion of foreign investments, but rate regulation plays a role as well.

Given that KEPCO's liabilities were found to be at a "red" level and were derived from the restriction of electricity charges rather than policy projects, its liabilities differed from those of other SOEs. The reason underlying its liabilities being categorized as red was due to a deficit in operating profits, which ultimately originated from government price regulation. What is noteworthy regarding KEPCO's liabilities is that they reached the most dangerous level among SOEs, but there is a simple but difficult solution to the problem—that is, an increase in rates. An operating balance deficit is similarly a core factor in the creation of liabilities at KORAIL. Unlike the case of KEPCO where rates are the major factor, however, the analysis shows that KORAIL's liabilities are largely the result of policy-related factors such as the operation of lines in a deficit combined with cost-related factors including the expense of utilizing railroad lines and personnel expenditures.

V

Policy Responses

1 Current Policy Responses

One of the important recent policy responses with regard to the management of public institutions' liabilities was the creation of a provision in the amendment of the National Financial Act and in the Act on the Management of Public Institutions (May 17, 2010) stipulating that public institutions should establish medium-and long-term plans of financial management and report them to the government, which in turn should report them to the National Assembly.

Starting in the first half of 2011 and progressing in earnest in 2012, requesting an independent institution to perform a preliminary feasibility study for large-scale programs conducted by public institutions was pursued. Target programs include, from among those undertaken by public institutions, new investment or capital investment programs with total expenses exceeding 50 billion won and the share of which assumed by the national treasury subsidy and public institutions' funds totals more than 30 trillion won. Unlike the previous method through which an outside review institution was selected by the relevant public institution upon its discretion, what changed is that the choice of outside institution is now limited to the Korea Development Institute. In addition, eligibility for exemption from the inspection was not clearly specified in the past, so there

was considerable room to allow exemptions. The scope of national policy projects subject to exemption was vague to the point that even programs only consulting with relevant authorities were at times regarded as such national policy projects. Other provisions of exemption, for example those related to budgetary waste and project delay, were also vague and abstract, allowing them to be exploited as a tool for avoiding a preliminary feasibility study. However, the subjects eligible for exemption from feasibility review have been minimized to allow overseas projects to fall under review, specified as follows: (1) among projects subsidized by the governmental budget, projects for which a preliminary feasibility investigation should be conducted pursuant to Article 38 of the National Financial Act; (2) projects of an emergency nature such as disaster prevention, restoration support and facility safety; (3) projects approved by the Minister in charge in consultation with the Minister of Strategy and Finance after considering special circumstances.

2 Classification of Countermeasures and Key Issues

A. Classification of Countermeasures

One of the strategies for resolving SOEs' liabilities is to privatize them. Once they become private enterprises, the liabilities they have assumed are separated from those of the public sector. Excluding the privatization option and assuming that the pertinent SOEs must remain within the public sector, options for reducing SOE liabilities can be classified into immediate (temporary) or gradual (ongoing) measures for liability reduction based on their direct impact on the financial situation. The former includes recapitalization and reduction in assets, while the latter refers to those measures designed to bring about a gradual change not through stock variables but through flow variables, as well as continuously reduce liabilities by improving profits.

<Table V-1> Methods of Liability Reduction

<table>
<tr><td colspan="6">Privatization</td></tr>
<tr><td rowspan="10">Partial Privatization

Remaining in the Public Sector</td><td rowspan="4">Immediate improvement of the financial structure</td><td rowspan="2">Recapitalization (and repayment)</td><td colspan="2">Expansion of private capital</td></tr>
<tr><td colspan="2">Expansion of public sector investment</td></tr>
<tr><td rowspan="3">Asset sales</td><td colspan="2">Sales of idle assets</td></tr>
<tr><td rowspan="2">Sales of business assets</td><td>Reduction of projects</td></tr>
<tr><td>Utilization of lease</td></tr>
<tr><td rowspan="6">Gradual improvement of the financial structure Gradual</td><td rowspan="4">Reduction of expenditures</td><td colspan="2">Reduction in business expenditures</td></tr>
<tr><td rowspan="3">Reduction in personnel, operating and other expenses</td><td>Reduction in personnel</td></tr>
<tr><td>Reduction in payment and welfare benefits</td></tr>
<tr><td>Reduction in operating expense and other expenses</td></tr>
<tr><td rowspan="3">Expansion of earnings</td><td rowspan="2">Expansion of its own incomes (Reduced deficit)</td><td>Price increases</td></tr>
<tr><td>Adjustment of sales[1)]</td></tr>
<tr><td colspan="2">Expanded governmental assistance</td></tr>
</table>

Note: 1) In a case where profitability is secured, sales are expanded, while in the case of deficits, sales are reduced.

The liability-reducing techniques depicted above can be divided among the following four options depending on who assumes the burden of resolving liabilities. The first manner includes policies related to reductions in programs or the role of public institutions. The most fundamental change that can be imposed is privatization, while other manners include improving the financial structure by selling project assets for curtailing the scale of business and restraining the expansion of business. In these cases, the burden would be shared by the general public who are beneficiaries of the project and the public institution that would lose a portion of its organization. The second class of techniques attempt to solve this problem by expanding the role of the government or its provision of support. In greater detail, they include the expansion of governmental investment, contributions and subsidies and would shift the burden onto taxpayers. The third type of technique is to increase rates. In this case, the consumers of the services provided by the SOEs shoulder the burden. The

fourth method is rationalization of management based on institutions' own efforts. Most of the burden would in this case be borne by public institutions.

B. Discussion of Key Issues

1) Enhancement of Management Efficiency

The option of selling idle assets is considered to feature little room for additional consideration since most available assets have been reviewed in the plans for the advancement of public institutions that have already been conducted or are underway. If large-scale sales of office buildings following the relocation of public institutions are excluded, this method, even if actively pursued, would contribute little to improving SOEs' fiscal structures. Unlike private companies, there are relative limitations to the selling, leasing and utilizing business assets of public institutions.

Also unlike private enterprises and similar to the case of cost reductions, significant limits exist with regard to the expansion of sales. First of all, as for the reduction of personnel expenses, even setting aside social and institutional aspects such as stability of labor, public institutions would have difficulty pursuing this without downsizing their businesses. As seen in Chapter V above, among the six major SOEs, only the increase in liabilities at KORAIL can be ascribed to management efficiency including personnel expenses.

Of course, this does not indicate that management efficiency is inconsequential in policy responses aimed at improving the financial structure of public institutions and curbing their increasing liabilities. Efforts to enhance management efficiency are especially important in the sense that it would be difficult to secure the political support necessary for the implementation of other policy measures, such as a rise in rates or expansion of government assistance, without clear efforts on the part of public institutions to rescue themselves or demonstrate a commitment to enhancing efficiency in their management. What should be emphasized here is that because improved management efficiency alone is insufficient to curb public institutions' mounting liabilities and cases where solely

management efficiency is applied among the available policy measures combating increased liabilities would be limited in their effectiveness, there is a need to meticulously examine other measures alongside improvement to management efficiency.

2) Expansion of Government Assistance

When policy programs are implemented through public institutions instead of the direct use of government funds, it can undermine fiscal transparency and weaken oversight by the National Assembly and the public. Of course, most of these issues have improved recently. Policies have shifted in the direction of making even institutional liabilities not included among national liabilities open and transparent, which can be seen as developing a foundation for allowing indirect influence by popular opinion. In addition, a framework was created for the reporting of the liabilities of public institutions to the National Assembly through medium-and long-term financial plans. However, people tend to place relatively less significance on the liabilities of public institutions' than on national liabilities. While the National Assembly maintains direct control over the general budget and national liabilities, its oversight of the liabilities of public institutions is loosely conducted. Taking this fact into consideration, it would be a desirable policy direction to financially support such programs through the government budget when public institutions' liabilities are specifically related to policy programs and there are insufficient means to cover them through public institutions' own revenues or other sources.

3 Policy Responses Toward Resolution of Liabilities

A. Liability Reduction Methods

It was pointed out that, albeit to varying degrees among individual SOEs, the improvement of management efficiency alone is limited in terms of its ability to restrain liabilities. Therefore, the core of policy responses

to this problem, with the exception of the cases of some SOEs including KORAIL, must be either a rise in rates or an expansion of governmental assistance. As seen in the coverage by Chapter IV of the causes of the mounting liabilities by corporations, the problem of liabilities shouldered by public institutions is ascribable to a variety of factors, so there is a limitation to identifying a single best solution or to providing a uniform answer.

One of the major sources of increased liabilities arises from capping the rates of public services at low levels. In this case, a reasonable adjustment of rates should be first considered and reviewed as a counterbalance to SOEs' swollen liabilities. Cases in point include KEPCO and KOGAS. The former's liabilities expanded largely due to exacerbated profitability and the greatest influence on profitability stemmed from the controls on rates in 2008 and 2009. The latter was largely impacted by regulations on rates despite an increase in costs since 2008. This rate control played a part in the expansion of liabilities assumed by EX, as well as for other SOEs.

When policy programs with no guarantee of profitability are expanded, the first option to be considered is the expansion of government support. In the case of LH, its liabilities snowballed as it launched massive simultaneous policy programs without detailed plans to secure the requisite financial resources. On the other hand, K-water once managed its liabilities in a stable manner relative to other SOEs, but its liabilities have recently increased due to its implementation of policy programs, including the Four Major Rivers Restoration Project and the Gyeong-In Ara Waterway Project. As for EX, policy programs with low economic feasibility, which thus do not guarantee profit but play a role in the corporation's liability accumulation, have been implemented out of national need. Part of KORAIL's liability is also attributed to such a factor.

Capital expansion can also be considered as a further manner of government support. To pursue this, there are two options; direct capital expansion by the government or raising capital through the stock market by issuing new stocks. The former could trigger controversy surrounding the financial circumstances and its appropriateness due to government investment causing a transfer of SOE liabilities to national liabilities.

Indeed, the government has attempted to augment the capital of KOGAS (2000) and issued new stocks in the Korea District Heating Corporation to fuel capital increases.[10] Similar efforts can be found internationally: the semi-public Brazilian multinational energy corporation Petrobras recently attempted this method. Capital expansion through the issuance of new stocks in the market naturally leads to a reduction in liabilities of the public sector, but the effect is limited, for it can expand into a dispute on privatization when capital expansion based on this method proceeds over a certain period of time.

Although a large number of policy alternatives to mitigate the problem of mounting liabilities are inevitably found in the increase of utility rates and expansion of financial assistance, policies for raising rates without accompanying efforts by the SOEs to enhance internal efficiency and improve related institutions would provoke low national acceptance, therefore demonstrating the need to pursue efforts to raise rates together with SOE self-rescue efforts and institutional restructuring.

B. Institutional Improvement: Enhancement of Transparency and Accounting Separation

The starting point for the management of public institutions' liabilities and other financial affairs is based upon the production, disclosure and delivery of accurate information, and in this regard separate accounts can be seen as an important subject for institutional improvement. It appears that separate management of policy programs would assist in managing the liabilities assumed by LH, K-water and EX. In the case of LH, the excessive undertaking of policy programs without consideration of the corporation's financial condition combined with the expansion of business to form the main contributors to the rapid aggravation of its finances. Therefore, by separately managing the expenses of policy programs and internal programs, the corporations may become

10) Capital increased by 130 billion won through the issuance of new stocks, public offering and sales of the stocks in January 29, 2010, and accordingly the percentage of the corporation's liabilities dropped from 230 percent to 180 percent.

open and transparent regarding the liabilities incurred by each program, while on the matter of excessive liabilities arising from the implementation of policy programs, government support measures need to be devised. To this end, it is necessary to consider the introduction and utilization of program budgeting. K-water's liabilities rapidly expanded as it undertook policy programs such as the Four Major Rivers Restoration Project and the Gyeong-In Ara Waterway Project alongside its existing programs. Given that these projects are difficult to include in a circular business structure under which the implementation of a program generates earnings which can in turn be re-invested in the program, it would be desirable to regard and manage such projects as policy programs rather than proprietary programs. EX should divide routes between service routes of high policy significance and those with high profitability. For policy-based services, the government should consider raising the allowable size of liabilities or increasing the proportion of the national treasury subsidy for construction costs, through which appropriate compensation should be made for the public services a corporation carries out as an SOE. Based on the result of economic and non-economic analysis in the preliminary feasibility study, one measure that could be considered is to define as for-profit programs those programs whose benefit-cost ratio exceeds one while considering the remainder as policy programs. As for KEPCO and KOGAS, however, it is considered that the necessity of separating accounts for the purpose of identifying policy programs is relatively low.

VI

Conclusions

As part of efforts to resolve SOEs' liabilities, which have already reached a dangerous level, a rise in the rates for public services has been suggested as a top-priority task. Public utility fees with a low proportion of cost recovery generally have resulted in SOE liabilities, which are being passed along to future generations. In addition, from the perspective of income distribution, it is not convincing to equally charge low public utility rates to all people. Rather, it is more appropriate to set rates at proper levels and then strengthen programs targeting low income groups. Along with the increase in rates, additional policy measures could be considered, too. There are some measures that could have an immediate effect on the reduction of liabilities, such as capital expansion and sales of assets. There are also other measures that could gradually reduce liabilities such as the enhancement of management efficiency.

What is more pressing is the establishment of institutional schemes to shelter SOE liabilities from further increases. One would be the gradual expansion of the role of government funding in those liabilities that actually should be assumed by the state. Liabilities arising from policy programs are basically the result of a structure through which the government enjoys the benefits from the programs without responsibility for their expenses. When the government pursues the implementation of policy programs, the related expenses should be paid by the government.

This would restrain overly ambitious attempts to conduct policy programs. To institutionalize restraint in such attempts, the system of separate accounts needs to be expanded to enable the government and SOEs to be held separately accountable for their own shares of liabilities among those liabilities currently assumed totally by SOEs. In addition, preliminary feasibility studies on SOEs should be strengthened and the medium-and long-term financial management plans which are required to be submitted annually to the National Assembly should better reflect realities and be enhanced in terms of their binding force.

We should continue to scrutinize SOE's liabilities and place an early-warning system into effect. This paper suggests that discriminatory management should be undertaken for SOEs included in the high-risk group ("highly risky" or "risky" groups). For instance, with regard to medium-and long-term financial plans submitted by SOEs in the high-risk group, the Public Institution Management Committee needs to undertake procedures to deliberate and approve their contents. They also need to be included as an important category in annual management evaluation. In addition, new programs introduced by SOEs in the high-risk group should be subject to the application of a wide-ranging preliminary investigation and relatively more-meticulous standards need to be applied. As such, when the Ministry of Strategy and Finance deliberates an increase in staffing, it needs to apply much more demanding standards to SOEs in the high-risk category. It should also be pointed out that the Ministry of Strategy and Finance needs to mobilize all available policy resources to resolve the liabilities of SOEs at high risk. The ability of SOEs to manage their liabilities should be reflected in the evaluation of the relevant department within the Prime Minister's Office. For instance, the liability situation of KEPCO should be included in the evaluation of the Ministry of Trade, Industry & Energy while that of LH needs to be featured in the evaluation of the Ministry of Land, Infrastructure, and Transport. This is due to the fact that liabilities are closely linked to government policies and difficult to improve through the evaluation of SOEs' independent efforts at betterment.

Addressing SOE liabilities is a combined operation to be undertaken not only by the government and SOEs alone, but with the general public as well. Collusion by these three stakeholders is represented by policy

programs and regulation on public utility rates, the crucial contributors to the increased liabilities of SOEs. First, in order to maintain its fiscal soundness, the government requires SOEs to implement policy programs, thereby incurring liabilities. SOEs are not reluctant to take on those programs because the expansion of the business leads to increases in their budget and makes promotions more rapidly than might otherwise have been, and their executives, although indeed concerned about liabilities, are unable to reject programs demanded by the government. The general public would greet such programs in the belief that they will be either the programs' direct beneficiaries or benefit indirectly through an economic recovery. Second, the government insists that a variety of public utility rates, such as those for electricity, gas, water, and transportation, be maintained at lower levels than related production costs. Individuals are pleased by lower rates. SOEs accept low public service rates under pressure from the government and take solace in the fact that there can be no possibility of privatization as long as rates remain low. The results of the collusion among the government, SOEs, and the general public, taking the form of policy programs and low public utility rates, leave SOEs with enormous liabilities. The core of SOEs' liabilities lies in the fact that the government and citizenry hope to enjoy benefits without paying what they should. The expenses are being handed down to succeeding generations in the form of SOE liabilities. Hiding behind SOE liabilities are the government and the people of South Korea.

To resolve the liabilities burdening SOEs, it is important for the government to pursue policy programs by means of its own budget, not SOEs' liabilities. The general citizenry should be also prepared to pay appropriate rates for public services. Of course, SOEs should also strive to enhance productivity through continued innovation. Only when government, SOEs and the general public are all willing to and actually undertake changes, can SOEs' liabilities that result from the collusion of these three stakeholders be resolved.

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