

# Identifying and Dealing with Fiscal Risks in Korea

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## 1. Introduction

Fiscal risk or fiscal vulnerability refers to the possibility that fiscal policy does not produce the intended results. Fiscal policy operates at three levels: *at the aggregate level*, where the concern is with total expenditure and taxation, the overall fiscal balance, and the accumulated liabilities and assets; *at the sectoral level*, where there is a strategic focus on the broad structure of spending (i.e., across major programs) and revenue (i.e., mainly across major tax bases); and *at the program level*, where the emphasis is on the microeconomic efficiency of individual spending and tax programs (Hemming and Petrie, 2000).

Fiscal risk can manifest itself and can therefore be assessed at any of these three levels. But in general dialogue, the attention is mainly focused on the first aspect, and this paper will address only those situations where a government is exposed to the possibility of failure to achieve its aggregate fiscal policy (or macro-fiscal) objectives. These objectives are specified as follows.

- First and foremost, a government should seek to avoid excessive fiscal deficits and debt, which could directly threaten short-term macroeconomic stability and longer-term fiscal sustainability.
- Second, a government should ensure that fiscal policy contributes to effective demand management by retaining sufficient flexibility to respond in an appropriate and timely way to domestic and external macroeconomic imbalances.
- And third, a government should raise revenue in a manner consistent with maintaining reasonable and stable tax rates.

These objectives are inter-dependent; failure to meet any of these macro-fiscal objectives can hamper achieving other objectives as well. For example, a high level of government debt may stir concerns about price stability or long-term sustainability of public finance, and prohibit the government from engaging in a counter-cyclical fiscal expansion. And an asymmetric response to economic fluctuations – running deficits during recessions while not achieving enough consolidation during booms – will result in a growing stock of debts or rising tax rates, or both.

## **2. Assessing Fiscal Risks**

The starting point for meaningful analysis and discussion of fiscal risk from an aggregate fiscal policy perspective is a clear view about the initial fiscal position, both in terms of whether macro-fiscal objectives are being met, and the quality of the information that is available about the initial fiscal position. The next step is to develop an understanding of the range of possible short-term macro-fiscal outcomes by assessing their sensitivity to underlying risks. The focus should then shift to government exposure to medium- and long-term adverse trends or influences that may affect fiscal sustainability. Finally, attention should be paid to vulnerabilities that arise from weaknesses in the structure of public finances, the institutional capacity for fiscal management, and the broader effectiveness of government.

### **2.1 The Initial Fiscal Position**

#### **2.1.1 Producing and Disseminating Fiscal Data**

The initial fiscal position is clearly a source of risk to the extent the macro-fiscal objectives described above are initially not met. Thus if the starting position is characterized by high deficits and debt, an inability to respond to macroeconomic imbalances, or very high tax rates, there would usually be a presumption of vulnerability.

For an adequate assessment of the latent risk factors in the initial fiscal position, it is essential to produce and disseminate fiscal data in a timely and comprehensive manner. Fiscal data should cover the full range of government fiscal activities beyond those approved by the parliament through budget. In particular, they should cover the whole general government sector including the central and local governments, and provide information on the quasi-fiscal activities undertaken by public corporations and other entities.

Perhaps the most important ones among many fiscal data are the stocks of government liabilities and assets. Knowing a government's gross debt is a minimum requirement for longer-term sustainability analysis, while information on the structure of debt (i.e., maturity, fixed vs. variable interest rates, and currency composition) is needed to assess short-term fiscal risk. If a government has sizable financial assets, net financial debt is more relevant than its gross debt to longer-term sustainability.

*The Code of Good Practices on Fiscal Transparency* published by IMF (2001) provides a useful guide on producing and disseminating fiscal data. The Code is composed of four parts; (1) clarity of roles and responsibilities, (2) public availability of information, (3) open budget preparation, execution, and reporting, and (4) assurances of integrity. IMF assessed the fiscal transparency of the Korean government in 2000 on the latter's request. IMF summarized their

findings and commentary in *Report on the Observance of Standards and Codes Fiscal Transparency Module: Korea*. Since then, many improvements have been made to the expenditure management system in Korea. But many points in their commentary are still relevant. Following are some of them:

- The budget documents should present fiscal information on a comparable basis for the two years preceding the budget year and explicitly highlight in the budget any material changes in budget coverage or classification that have occurred between years. In addition, budgetary projections should be included for two years following the budget year as well as information on the forecast errors of past budgets.
- The medium-term economic framework should be enhanced with a more detailed projection of macroeconomic and fiscal aggregates, an explicit forecast of budgetary aggregates in the absence of policy action, and a description of policy actions that will need to be taken to achieve the government's medium-term fiscal objectives.
- The government should provide within the budget, and to the public, a clear statement and quantification of their quasi-fiscal activities. Such activities would include the subsidy component of public financial institution and budgetary lending, the implicit subsidies resulting from government guarantees, the fiscal costs of central bank sterilization activities, the refinancing at below market rates for financial institutions that extend loans to SMEs, and any other material quasi-fiscal activity conducted by the central bank, publicly owned financial institutions, or nonfinancial public enterprises.
- The budget should report information on the structural or cyclically adjusted balances and consider providing information in budget documents on accrual-based and generational accounts. The budget should contain an explicit assessment of fiscal sustainability including the sustainability of the occupational and national pension schemes and the statement on tax expenditures currently reported to the legislature should be included as part of the budget documentation.
- The budget should contain a comprehensive identification and quantification of the major fiscal risks. The statement should provide clear information on the effect of variations in economic assumptions as well as the parameters used to arrive at the fiscal forecasts. Such a statement will facilitate an assessment of the reliability of budgetary forecasts under varying economic scenarios.
- The budget should contain complete information on government contingent liabilities as well as on potential future obligations the budget will be required to meet, such as the actuarial imbalances in the occupational pension schemes. The report on contingent

liabilities (including but not limited to government guarantees) would include an indication of the nature of each contingent liability, its beneficiaries, and the expected cost of each liability. In addition, there should be a clear reporting of those contingent liabilities that have resulted in expenditure during the previous year's budget.

- The government should provide a more analytical ex post reconciliation between actual fiscal performance and the budget plan. Such a report would contain an analysis of deviations from budget plans and decompose those deviations into those resulting from a change in policies, changes in parameter, aggregate shocks to the economy, forecast errors, and changes in the timing of revenues and spending. The government should consider a less detailed report on the fiscal position to the National Assembly at mid-year.
- Improve the quality of information on the general government and reduce delays in the availability of data. In addition, reporting on the position of the general government should include information on the activities of the extrabudgetary funds held at the local government level. The government should aim to more widely disseminate general government information (such as by publishing the information in budget documents and also on MOFE's website).
- Like the majority of other OECD countries, Korea should attempt to regularly publish information on its financial assets in order that the public can assess the net indebtedness of the public sector. Such publication would include comprehensive information on valuation methods and should consider including information on the maturity structure of the debt stock. Gross and net debt figures should be made available, in both Korean and English, on MOFE's website on a quarterly basis with no more than one-quarter delay.
- Detailed information on government macroeconomic and fiscal projections should be made available to the public. Working methods and assumptions underlying the forecasts should be made available and should include a statement making it clear who has produced the forecasts.

Only when these recommendations are implemented by the Korean government, would it be possible to assess the initial fiscal position in its full range.

### **2.1.2. Contingent and Implicit Liabilities**

The above discussion referred to contingent and implicit liabilities many times. Polackova (1998) specifies four types of liabilities: direct vs. contingent and explicit vs. implicit.

- *Direct liabilities* are predictable obligations that will arise in any event. They are predictable based on some specific underlying factors; they do not depend (are not

contingent) on any discrete event.

- *Contingent liabilities* are obligations triggered by a discrete but uncertain event. The probability of the contingency occurring and the magnitude of the government outlay required to settle the ensuing obligation are difficult to forecast. Probability and magnitude depend on some exogenous conditions, such as the occurrence of particular event (for example, a natural disaster or banking crisis) and some endogenous conditions, such as the design of government programs (an example being the contracts for state guarantees and insurance), as well as the quality and enforcement of regulations and supervision.
- *Explicit liabilities* are specific government obligations defined by law or contract. The government is legally mandated to settle the obligations when it comes due.
- *Implicit liabilities* represent a a moral obligation or expected responsibility of the government that is not established by law or contract but instead is based on public expectations, political pressures, and the overall role of the state as society understands it.

These four types of liabilities produce the following four categories of the potential financial requirements that central governments face (Brixi and Modi, 2002). Examples of government programs and promises in each category are provided in table 1.

- *Direct explicit liabilities* are legal or contractual obligations of the government that will arise in any event. These constitute the main subject of conventional fiscal analysis.
- *Direct implicit liabilities* will also arise in any event, but the government will not be legally obliged to act on them. Such obligations often arise as a presumed consequence of public expenditure policies in the longer term. Given their implicit nature, these obligations are not captured in government balance sheets. Typically, they are high for demographically driven expenditures. Among direct implicit liabilities, recent literature has particularly explored *public pension liabilities*.
- *Contingent explicit liabilities* are government legal obligations to make a payment only if a particular event occurs. Because the fiscal cost of contingent explicit liabilities is invisible until they are triggered, they represent a hidden subsidy, blur fiscal analysis, and drain government finances only later. For that reason, *state guarantees* and financing through *state-guaranteed institutions* look politically more attractive than budgetary support even if they are more expensive later. In the markets, contingent government obligations may immediately create moral hazard, particularly if the government guarantee covers the whole rather than a part of the underlying assets and all rather than

selected political or commercial risks.

- *Contingent implicit liabilities* depend on the occurrence of a particular future event and on government willingness to act on them. Such obligations are typically not officially recognized until *after* a failure occurs. The triggering event, the cost at risk, and the required size of government outlay are uncertain. In most countries, the financial system represents the most serious contingent implicit government liability. Experiences have indicated that markets expect the government to help financially far beyond its legal obligations if stability of the financial system is at risk.

**Table 1: Fiscal Risk Matrix**

<b>Liabilities</b>	<b>Direct</b>	<b>Contingent</b>
<b>Explicit</b>	<ul style="list-style-type: none"> <li>- Foreign and domestic sovereign borrowings (loans contracted and securities issued by the central government)</li> <li>- Expenditures by budget law</li> <li>- Budget expenditures legally binding in long term (civil service salaries, civil service pensions)</li> </ul>	<ul style="list-style-type: none"> <li>- State guarantees for nonsovereign borrowing and obligations issued to subnational governments and private sector entities (development banks)</li> <li>- Umbrella state guarantees for various types of loans (such as mortgages, student studying agriculture, and small businesses)</li> <li>- State guarantees (for trade and the exchange rate, borrowing by a foreign sovereign state, private investments)</li> <li>- State insurance schemes (for deposits, minimum returns from private pension funds, crops, floods, war risks)</li> </ul>
<b>Implicit</b>	<ul style="list-style-type: none"> <li>- Future recurrent costs of public investment projects</li> <li>- Future public pensions (as opposed to civil service pensions) if not required by law</li> <li>- Social security schemes if not required by law</li> <li>- Future health care financing if not specified by law</li> </ul>	<ul style="list-style-type: none"> <li>- Default of a subnational government and public or private entity on nonguaranteed debt and other liabilities</li> <li>- Cleanup of the liabilities of privatized entities</li> <li>- Bank failures (beyond state insurance)</li> <li>- Investment failure of a nonguaranteed pension fund, employment fund, or social security fund (social protection of small investors)</li> <li>- Default of the central bank on its obligations (foreign exchange contracts, currency defense, balance of payments stability)</li> <li>- Bailouts following a reversal in private capital flows</li> <li>- Residual environmental damage, disaster relief, military financing, and the like</li> </ul>

Source: Polackova (1998).

## 2.2 Short-Term Fiscal Risks

For the purpose of assessing fiscal risk, it is necessary to move beyond the initial fiscal position, since the one-year horizon of a budget, and by implication of the initial fiscal position, does not do justice to the full extent of the short-term risks to which fiscal outcomes are exposed (Hemming and Petrie, 2000). For this reason, the initial fiscal position should be accompanied

by a short-term forecast which looks at least two years ahead. The short-term forecast should be based on unchanged policies, in the sense that policy intentions which have been announced but not implemented should be excluded, and it should be purged of temporary measures affecting the initial fiscal position. This forecast should be fairly detailed, but less so than the description of the initial fiscal position.

The principal short-term fiscal risks that need to be addressed are the following.

- *The initial fiscal position and the short-term forecast is sensitive to changes in macroeconomic variables and other sources of economic risk.* Unanticipated changes in GDP growth rate, unemployment, inflation, interest rates, external trade, capital flows, the exchange rate, and other macroeconomic variables affecting macro-fiscal outcomes gives rise to forecasting risk affecting revenue, expenditure, and financing. The structure of debt is important in this regard, since it affects the fiscal risk associated with short-term movements in interest rates and the exchange rate. Revenue and expenditure are also subject to other risks affecting the tax base (e.g., corporate profitability), nontax revenue (e.g., mineral prices), and spending programs (e.g., government wage increases).
- *It is possible that contingent liabilities will be called when no budget provision has been made to meet them.* While a case can be made in principle favoring budgetary provision for explicit liabilities, the appropriate way to provide for them and the practicalities of doing so raise issues that have resulted in limited provisioning (see Schick, 1999). Implicit liabilities will always entail more substantial risk, since provisioning is usually judged inappropriate because of moral hazard problems.
- *There may be a lack of clarity about the size of specific expenditure commitments* in that provision may be made in the budget for spending on an activity (e.g., bank restructuring), but there is less than usual precision about the cost implications of that activity.
- *Finally, some fiscal policies may be imprecisely defined.* This would be the case where a government announces a policy intention (e.g., to provide incentives for saving and investment) but either the details of the way in which is to be implemented may not be well developed or the implications of an announced method of implementation are unclear.

### **2.3 Long-Term Fiscal Sustainability**

Even if fiscal outcomes are not exposed to significant short-term risks, running persistent fiscal deficits may result in debt levels which become a source of fiscal and broader macroeconomic difficulties over the medium term. This problem is often called the

sustainability of fiscal policy. Below we will summarize the general analytical background and discuss a practical approach to assessing fiscal sustainability.

### 2.3.1 Analytical Background

Most analytical discussion of fiscal sustainability take as their starting point the following static budget constraint (Chalk and Hemming, 2000).

$$(1) \quad B_{t+1} = R_t B_t + D_t$$

where  $B_t$  is the beginning period stock of government debt (i.e., bonds outstanding),  $R_t = 1 + r_t$  is the discount factor applying between periods  $t$  and  $t+1$ , and  $D_t$  is the primary fiscal deficit (i.e., it excludes interest payments). Solving equation (1) forward gives the intertemporal budget constraint.

$$(2) \quad B_t = - \sum_{j=0}^{\infty} R(t, t+j)^{-1} D_{t+j} + \lim_{T \rightarrow \infty} R(t, t+T)^{-1} B_{t+T+1}$$

where  $R(t, t+j) = \prod_{k=0}^j R_{t+k}$  is the discount factor applying between periods  $t$  and  $t+j$ . From equation (2), sustainability (or solvency) requires that the present value of future primary surpluses must exceed the present value of future primary deficits by a sufficient amount to cover the difference between the initial debt stock and the present value of the terminal debt stock.

At this point, a no-Ponzi game restriction is often imposed. In a Ponzi game, the government rolls over its debt in full every period by borrowing to cover both principal and interest payments. When a Ponzi game is allowed, the government can postpone its debt burden to the infinite future. Fiscal sustainability is often taken as synonymous with a no-Ponzi game restriction. And this restriction is equivalent to the present value budget constraint,

$$(3) \quad B_t = - \sum_{j=0}^{\infty} R(t, t+j)^{-1} D_{t+j}$$

and the transversality condition,

$$(4) \quad \lim_{T \rightarrow \infty} R(t, t+T)^{-1} B_{t+T+1} = 0.$$

Equation (3) implies that today's government debt should be matched by an excess of future primary surpluses over primary deficits in present value terms. And equation (4) implies that the debt should not grow faster than the interest rate:

(5) growth rate of debt < interest rate.

It should be noted that the sustainability judgments based on equations (3), (4), or (5) are made without reference to any economic variables except the stock of government debt, projected primary surpluses and deficits, and the interest rate on government debt. This feature produces results which are intuitively unappealing. For example, fiscal sustainability is secured when

(6) growth rate of the economy < growth rate of debt < interest rate.

But when this holds, the debt-to-GDP ratio grows to infinity, which hardly corresponds to a common concept of fiscal sustainability. In contrast, the debt-to-GDP ratio falls asymptotically to zero in the following case of equation (7), although equation (5) is violated.

(7) interest rate < growth rate of debt < growth rate of the economy.

To summarize, the present value budget constraint has implications that are strange to our common understanding. Accordingly, statistical tests such as in Hamilton and Flavin (1986) that rely on the present value budget constraint do not appear useful. They tested the stationarity of  $B_t$  and  $D_t$  based on equation (4) and concluded that fiscal sustainability has been maintained in U.S.

### 2.3.2. Sustainability Indicators

A separate strand of the empirical literature focuses on indicators of how far fiscal policy departs from sustainability. Such indicators are not backed by a formal definition of sustainability. Instead, they rely on a more intuitive notion of what distinguishes sustainable from unsustainable fiscal policy. Thus Blanchard et al. (1990) look the change in policies required to maintain the current debt ratio. They then develop two indicators of sustainability. The *primary gap indicator* is based on the permanent primary deficit necessary to stabilize the debt ratio. The latter is given by

$$(8) \bar{d} = (n_t - r_t)b_t$$

where  $n_t$  is the growth rate,  $b_t = B_t/Y_t$  is the ratio of debt to output. The primary gap indicator is then

$$(9) \bar{d} - d_t = (n_t - r_t)b_t - d_t.$$

A negative value for this indicator suggests that the current primary deficit is too large to

stabilize the debt ratio and that fiscal policy is thus unsustainable.

For an alternative perspective, Blanchard et al. propose a tax gap indicator, which is based on the permanent tax to output ratio necessary to stabilize the debt ratio. This is given by

$$(10) \bar{t} = g_t - (n_t - r_t)b_t$$

where  $g_t$  is the ratio of government noninterest spending to output. The tax gap indicator is

$$(11) t_t - \bar{t} = t_t + (n_t - r_t)b_t - g_t$$

which is the difference between the constant debt tax ratio and the current tax ratio.

Blanchard et al. also suggests a medium-term tax gap indicator, which is the difference between the current tax ratio and that necessary to stabilize the debt ratio over the next  $N$  years assuming constant interest and growth rates.

$$(12) t_t - \bar{t} = t_t + (n_t - r_t)b_t - \frac{1}{N} \sum_{i=0}^N g_{t+i} .$$

The indicators suggested by Blanchard et al. are useful in that they are quite simple and have a ready intuition that should appeal to most economists and policymakers. But the principal weakness with them is that they are based on arbitrary definitions of sustainability, namely a constant ratio of debt to output. For countries that are heavily indebted, sustainable fiscal policies may necessitate a reduction of debt. Conversely, for countries that have little debt, fiscal policies may still be sustainable even if they lead to an increase in debt. These possibilities are not captured by the Blanchard indicators, although some flexibility can be imparted by varying debt targets.

### 2.3.3. Medium-Term Projections

Perhaps the most common (and practical) approach to assessing fiscal sustainability utilizes medium-term economic and economic projections. Through these projections, one gains understanding on the future development of deficits and debt, and searches for the ways to secure sustainability. Chalk and Hemming (2000) describe the steps followed by IMF staff to gauge whether a country's fiscal position is sustainable in the following way.

- Based on the latest macroeconomic data, a projection is made – usually assuming that current policies are maintained. This is the baseline scenario. Such a scenario would typically provide details for key variables from the real sector, external, monetary, and fiscal accounts: output growth, investment, and inflation; imports, exports, the current

account, and reserves; money supply, domestic credit, and interest rates; and revenue, noninterest expenditure, and interest payments.

- From the fiscal projection and the amount of monetary financing that could be made available to cover future fiscal deficits, debt is projected and sustainability is then assessed. While different criteria are used to assess sustainability, an increasing debt ratio is generally regarded as a cause for concern, since it will typically be accompanied by a deterioration in key macroeconomic indicators (i.e., low growth, rising inflation, increasing external debt and/or falling reserves) over the medium term.
- If the debt dynamics indeed look unfavorable, then an alternative adjustment scenario is prepared which will typically define a path for the debt ratio which results in stability over the medium-term and favorable developments in macroeconomic indicators. Attention is then focused on the adjustment in the primary balance required to meet the debt target, and the fiscal measures that can generate this adjustment. In the process, an attempt is made to account for the effect of fiscal adjustment on other economic variables (most notably growth and interest rates, since these directly influence sustainability calculations). The final adjustment scenario may only be reached after a process of iteration which could require a respecification of the debt target.

In addition to medium-term projections that span 5 to 10 years ahead, long-term projections and scenarios are needed to take into account expenditure pressures that are due to emerge in the distant future. The impact of demographic developments on pensions and health spending is an obvious source of such pressure in many countries including Korea. Long-term projections are usually even less detailed than medium-term projections given their more speculative nature.

### **2.3.4 Macroeconomic Impact of Deficits and Debt**

A critical question in assessing fiscal sustainability with medium- to long-term projections is finding the optimal level of debt that a country should aim for. When the debt ratio is expected to diverge from the optimal level, various policy options would be sought after to move the ratio to the optimal level in coming years. But in theory and in practice, it is very difficult (in fact, impossible) to find “the” optimal level of debt.

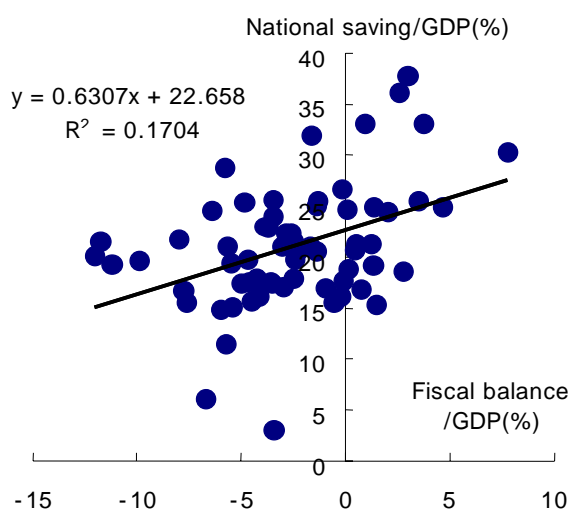
There is general agreement that fiscal deficits have adverse macroeconomic consequence, both in terms of growth and price stability. The impact on growth is derived from the following identity;

$$(13) \quad S + (T - G_C) = (I + G_I) + XM$$

where  $S$  is private saving,  $T$  is tax revenue minus transfers,  $G_C$  is government consumption,  $I$  is private investment,  $G_I$  is government investment, and  $XM$  is net export or current account surplus. In this expression,  $T - G_C$  represents government saving and  $I + G_I$  total investment in the economy. Also note that fiscal balance equals  $T - G_C - G_I$ .

Equation (13) shows that national saving, i.e., the sum of private and government saving, equals the sum of total investment and current account surplus. A deterioration in fiscal balance is therefore expected to lead to a decline in government saving and to a decline in investment and/or current account surplus. Of course, when the deterioration in balance is entirely due to an increase in government investment, or when the private saving increases in tandem with the declining fiscal balance, national saving is not affected, nor are investment and current account surplus. But in rare cases do deficits solely reflect an increasing investment spending, and it is generally believed that the so-called “Ricardian equivalence” does not hold perfectly in most countries. Figure 1 shows that over the past two decades, a 1 percentage point decline in fiscal balance as a proportion of GDP has been on average accompanied by a 0.6 percentage point decline in savings ratio in OECD countries.

**Figure 1. National Saving and Fiscal Balance**



Note: Data were averaged over 5-year periods (1980-84, 1985-89, 1990-94, 1995-99) and pooled across 22 OECD countries.

Source: OECD, Economic Outlook, various issues.

Fiscal deficits can also add to inflationary pressure, especially when the government “monetizes” the deficit through borrowing from the central bank. With a high level of debt, the government may also be tempted to alleviate its real debt burden by introducing surprises in money supply. Even if the government is not currently acting in this way, an expectation that

such outcome would be inevitable at some point in the future can lead to inflation today, as the public reduces their demand for money whose value is expected to decline (Sargent and Wallace, 1981). After the World War, advanced countries have on whole prohibited the monetization of deficits, but the possibility is still open for them.

A third channel through which fiscal deficits and government debt can affect the macroeconomy is its impact on investor confidence (Ball and Mankiw, 1995). A government with a high level of debt may be forced to raise tax rates (especially on domestic assets) to pay down its debt or resort to monetization to lessen its debt burden. The fear of such unpleasant consequences can surface in a sudden change of mood, and result in a flight from domestic assets.

Perhaps a more immediate problem caused by a high level of debt is that it hinders a smooth operation of fiscal policy. The associated large interest payments drive out expenditure on other priority programs and increase deficits. The end result is usually a combination of under-spending in key areas and the setting in of adverse debt dynamics. In particular, many advanced countries are faced with rising demand for health and welfare due to the aging population. Without a reduction in debt level, the total spending pressure can become unbearable. In addition, a high level of debt increases the sensitivity of spending to interest rates, and makes expenditure management more difficult.

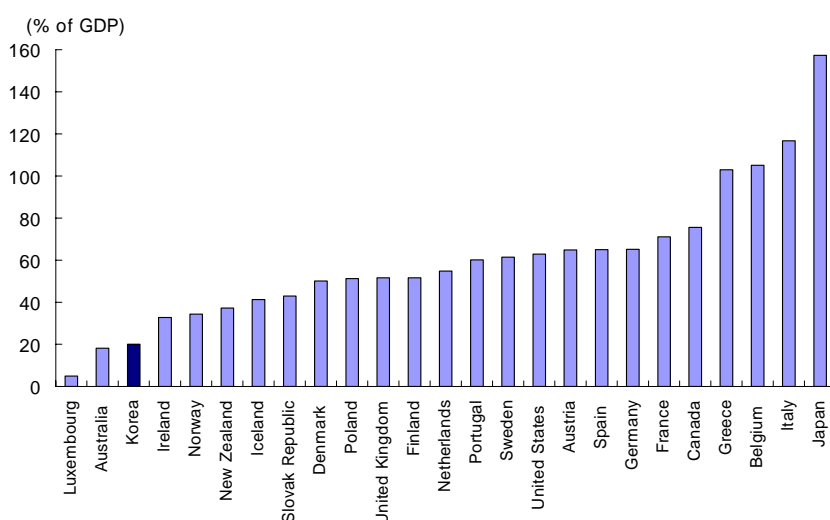
The above discussion indicates that the smaller deficits (or larger surpluses) are better than larger deficits (or smaller surpluses). But keeping the budget in balance or running surpluses every year is not necessarily desirable because it limits the role of fiscal policy as a counter-cyclical tool. Temporary deterioration in fiscal balance in response to economic downturn is generally regarded as desirable to allow the automatic stabilizer to work in full. In addition, raising or lowering tax rates every year to keep the budget in balance would hamper the stability of tax system and increase the deadweight loss of taxation.

Another value attributed to government borrowing activities derives from the special role that government bonds play in the bond market. In many countries, yields on government bond form the basis on which to price the bonds issued by private entities. It is therefore claimed that a deep market for government bond helps develop the bond market as a whole. It also helps the government because a sudden increase in its financing needs brought about by internal or external shocks can be easily met in the market without causing chaos.

In summary, there appears to be a consensus in the literature that a lower level of government debt should be pursued to the extent possible, taking into account the beneficial effects that government borrowing can have on the cyclical management of economy and on the

development of financial market. But the literature is silent about the exact amount of debt that a government should aim for. In fact, OECD countries exhibit highly disparate levels of debt-to-GDP ratio, with no obvious difference in economic performance that can be attributed to the differing levels of government debt. Figure 2 shows that at the end of 2003, Luxemburg had the smallest debt-to-GDP ratio of 5 percent while Japan had the highest one of 157 percent. In between, the debt-to-GDP ratio was 20 percent in Korea, 63 percent in U.S., and 65 percent in Germany.

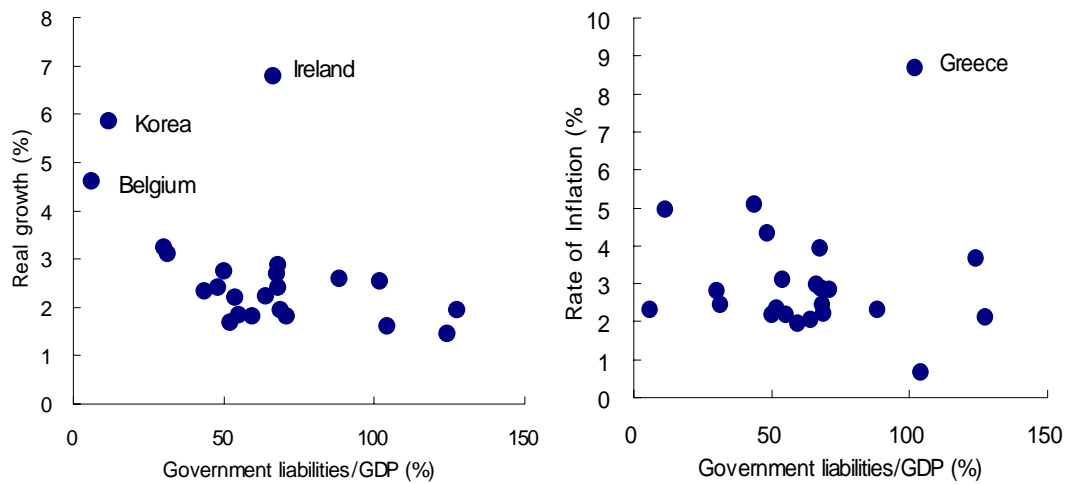
**Figure 2. General Government Gross Financial Liabilities**



Note: At the end of 2003.  
Source: OECD, *Economic Outlook*, No. 75, June 2004.

The left panel in Figure 3 shows that countries with high debt-to-GDP ratios tend to have low growth rates. This can be taken as evidence for the adverse impact of government debt on economic growth. But different interpretation is possible. First of all, we have a spectacular outlier (Ireland). Second, the causality may run from economic growth to government debt, with high growth making it easier to maintain fiscal soundness and reduce the debt-to-GDP ratio. The relation between inflation and government debt is even less clear as can be seen on the right panel.

**Figure 3. Government Debt and Economic Performance**



Note: Variables were averaged over 1990-2003.  
Source: OECD, *Economic Outlook*, No. 75, June 2004.

### 2.3.5. Target Level of Debt

One conclusion that can be drawn from the above discussion is that our attention should be focused on fiscal balance rather than on the level of debt *per se*. Sound fiscal balance boosts investment and long-term growth, and helps improve the current account balance. On the other hand, the impact of government debt on the macroeconomy is uncertain, and its importance looks of a second degree compared to that of fiscal balance.

Of course, if there is a reasonable belief that the general investor confidence is being or soon will be threatened by the large outstanding stock of government liabilities, then we would make greater efforts to reduce the debt level. The same holds true if the high level of debt is severely limiting the government's ability to operate fiscal policy smoothly. But we should be mindful that an abrupt and excessive consolidation can have a contractionary impact on the economy. Such consolidation should thus be avoided to the extent possible unless there exists a direct and immediate threat to investor confidence coming from a high level of debt. In the latter case, a decisive action by the government to reduce the debt level may improve investor confidence, lower interest rates, stabilize the exchange rate, and have expansionary rather than contractionary impact.

Barring such extreme cases, we would start from the current level of debt, and reduce the debt-to-GDP ratio slowly over the coming years by maintaining a sound fiscal balance. The speed of reduction will depend on the average magnitude of fiscal balance and the rate of economic growth. A more aggressive consolidation effort and a higher growth rate will

accelerate the reduction, while a less aggressive effort and a slower growth will be accompanied by a slower reduction.

Most countries in fact adopt this kind of strategy in setting up their target level of debt. European countries in the Economic and Monetary Union (EMU) are required to reduce their debt-to-GDP ratio to 60 percent and below, which is not drastically different from the current level of debt in most cases (Figure 2). In U.K., which is not a member of EMU, the net debt of the public sector is currently at around 30 of GDP, and the government is aiming to maintain it at below 40 percent of GDP. On the other hand, one of the long-term fiscal objectives of the New Zealand government is to reduce gross sovereign-issued debt as a percentage of GDP slowly over the longer term and make it pass through 20 percent before 2015, starting from the current level of around 25 percent.

## **2.4 Structural Weaknesses**

In the final stage of assessing fiscal risks, we should look at various structural factors that are resident inside and outside the public finances. They are the proportion of nondiscretionary spending to total spending, items of expenditure that are too large or too small compared to those in other countries, the structure of taxation and revenue, the institutional capacity for fiscal management, and the general effectiveness of government (Hemming and Petrie, 2000).

The composition of expenditure and revenue is important in assessing vulnerability. A *principal source of vulnerability is a high proportion of nondiscretionary spending to total spending*, which limits a government's flexibility to adjust spending levels downward when it is necessary to do so. Nondiscretionary spending is that for which there is a legal or other strong obligation on a government to meet. The most notable examples are interest payments, formula-based transfers to lower levels of government, and public pensions. However, the components will vary from country to country, and classifying all spending as either nondiscretionary or discretionary may require difficult judgements. In many countries, the distinction may boil down to that between spending on transfers (broadly defined) and spending on goods and services. In case of Korea, nondiscretionary or mandatory spending would include interest payments, local shared taxes, local transfer fund, and social insurance benefits. The large, temporary spending to transform the financial sector restructuring bonds into treasury bonds may also be included in mandatory spending.

*Some large items of expenditure are a source of vulnerability because they are resilient to adjustment given the powerful interests groups they serve.* There may be also latent expenditure needs that do not manifest themselves until triggered by a shock or discontinuity of some kind. Any significant gap in expenditure, compared to established norms, could be exposed in this

way. For example, the need for a social safety net may become apparent only following an economic crisis, but once in place it will almost certainly become permanent. This was certainly the case in Korea after the recent crisis.

A good tax structure is one where revenue derives from a range of taxes with broad bases, ideally large macroeconomic aggregates (i.e., wages, profits, and consumption, including imports of consumables). Not only will this tend to result in reasonable tax rates, but it will also ensure a moderately elastic tax system, which is desirable from the point of view of facilitating countercyclical fiscal policy through the operation of automatic stabilizers. *A revenue composition dominated by just one or two taxes, especially if they have narrow bases, is a source of vulnerability*, both in terms of increasing a government's exposure to unexpected fiscal developments because revenue from just a few taxes is likely to be volatile (e.g., reflecting the fact that trade tax revenue is highly sensitive to exchange rate changes), and limiting its capacity to respond when the need arises because tax rates probably have to be very high. Frequent tax law changes, especially when they result in more exemptions, tax holidays, and other reliefs, as is often the case, can add to vulnerability by progressively undermining the tax base. A government's capacity to respond is also constrained by extensive earmarking which limits the scope for discretionary tax changes. Finally, a heavy reliance on nontax revenue, the main sources of which (grants, royalties, privatization proceeds, central bank profits) may not be stable and/or particularly responsive to policy intervention, can also contribute to vulnerability.

*The institutional capacity for fiscal management is a major determinant of fiscal vulnerability.* There are numerous aspects of the institutional capacity for fiscal management that could be relevant to fiscal vulnerability. Many are covered in the fiscal transparency code, most notably roles and responsibilities of government and within government, the public availability of information, the budget process, and the integrity of fiscal information.

Finally, *a government that has a general reputation for being ineffective will usually be vulnerable.* Thus a government that gets involved in too many activities that should be left to the private sector, whose agents (i.e., public servants, public enterprise managers) have a relationship with politicians which is inconsistent with the arm's-length principle, and/or that is characterized by extensive nontransparency and corruption, cannot be expected to meet its macro-fiscal objectives on a consistent basis.

In this regard, IMF (2001) advised the Korean government to reassess and more clearly define its fiscal role by:

- Reducing public sector direct involvement in the corporate and financial sector, cutting

the subsidy component of the activities of the credit guarantee funds and allowing the corporate and financial sector to be run purely on a commercial basis. The fiscal consequences of any remaining government participation in the financial and corporate sector should be clearly reported and have an explicit budgetary authorization.

- Clearly distinguishing the BOK's monetary policy activities from the activities of the fiscal authorities. The BOK should be operationally independent and have full autonomy in the setting of monetary policy. All quasi-fiscal activities of the central bank such as sterilization of foreign exchange intervention as well as refinancing at below market rates for financial institutions that lend to SMEs should be clearly identified and reported as a fiscal activity.
- Conducting all intra-government lending on market-based terms. The recent legislation prohibiting direct lending from the National Pension Fund to finance budgetary activities is a welcome development and should be adhered to. As the nonmarket security holdings of the pension fund mature the assets should be reinvested in marketable instruments.
- Reducing the current extensive recourse to lending from the budget at subsidized rate and the offering of loan guarantees for commercial purposes. Such activities obscure the boundaries of the government's fiscal activities. The subsidy component of all remaining budgetary loans and guarantees should be reported as an explicit budget subsidy.

### **3. Managing Fiscal Risks in Korea**

From the previous discussion follows the following recommendations for the Korean government.

First, for a better assessment of initial fiscal position, it is necessary to produce and disseminate fiscal data that are timely, accurate, and comprehensive. The main venue will be budget documents, which need to contain, among other information, the following fiscal data:

- medium-term fiscal objectives of the government and plans to achieve them;
- fiscal information for the two years preceding the budget year and for the two years following it;
- an analytical ex post reconciliation between actual fiscal performance and the budget plan, decomposing the deviations from the budget plan into those resulting from a change in policies, changes in parameter, aggregate shocks to the economy, forecast errors, and changes in the timing of revenue and spending;
- an explicit forecast of budgetary aggregates in the absence of policy action, additional

spending required to meet policy proposals embodied in the budget, and a description of policy actions that will need to be taken to achieve the government's medium-term fiscal objectives;

- the stock of government liabilities and assets (especially financial assets), the structure of liabilities (maturity profile, fixed vs. variable interest rates, currency composition), and the risk rating of government bonds;
- information on the structural or cyclically adjusted balances, an explicit assessment of fiscal sustainability including the sustainability of the occupational and national pension schemes;
- a clear statement and quantification of various quasi-fiscal activities, including the subsidy component of public financial institutions and budgetary lending, the implicit subsidies resulting from government guarantees, the fiscal costs of central bank sterilization activities, the refinancing at below market rates for financial institutions that extend loans to SMEs, and any other material quasi-fiscal activities conducted by the central bank, publicly owned financial institutions, or nonfinancial public enterprises;
- a comprehensive identification and quantification of the major fiscal risks, such as government contingent liabilities and any other potential future obligations that budget will be required to meet;
- information on the general government; and
- detailed information on government macroeconomic and fiscal projections.

In the second stage, sensitivity analysis should be carried on the short-term fiscal projections. The principal short-term fiscal risks that need to be addressed are the following.

- changes in fiscal projections following the changes in macroeconomic variables such as GDP growth, unemployment, inflation, interest rates, external trade, capital flows, and the exchange rate;
- contingent and/or implicit liabilities that will be called when no budget provision has been made to meet them;
- the size of specific expenditure commitments for which provision has been made in the budget but there is less than usual precision about their cost implications; and
- imprecisely defined fiscal policies.

The results of the analysis on these risk factors may or may not be opened to the public. In

particular, when the publication is likely to produce moral hazard problems, it would be wise to opt for non-publication.

In the third stage, the medium- to long-term sustainability of fiscal policy should be assessed, mainly with the help of fiscal projections. If the debt-to-GDP ratio is expected to rise significantly in the future, or if the current level of debt-to-GDP ratio is deemed too high to guarantee stability in financial markets and a smooth operation of fiscal policy, then an appropriate course of actions to contain the spending pressure and secure sufficient revenue will be sought after. Otherwise, we would start from the current level of debt, and reduce the debt-to-GDP ratio slowly over the coming years by maintaining a sound fiscal balance and letting the economic growth to lessen the burden of debt as a percentage of GDP.

In the final stage, attention should be paid to vulnerabilities that arise from weaknesses in the structure of public finances, the institutional capacity for fiscal management, and the broader effectiveness of government. Of major concern are following variables:

- the proportion of nondiscretionary spending, in the form of interest payments, local shared taxes, local transfer fund, and social insurance benefits, and possibly the large, temporary spending to transform the financial sector restructuring bonds into treasury bonds;
- the sectoral composition of spending in comparison with those in other countries, with any significant gap indicating latent expenditure needs that may manifest themselves in the future;
- the structure of taxation, including the broadness of major tax bases, top marginal tax rates, output elasticities of tax revenues, the size of tax expenditure, the existence of earmarked taxes, the frequency of tax law changes, and the reliance on unstable non-tax revenues;
- the institutional capacity for fiscal management revealed through, among others, the difference between the original budget and the budget outturn, the number and magnitude of supplementary budgets introduced during a fiscal year, delays in preparing and auditing final accounts, the size of tax arrears and tax refunds, and the effectiveness of the tax audit system, and the use of direct lending and loan guarantees; and
- the effectiveness of government, for which information is available from the World Competitiveness Report of the Management Development Institute and the Corruption Perception Index of the Transparency International.

The assessment of fiscal risks along this line should be conducted as part of the annual

budget process. At the outset, the central budget office would make medium- and long-term fiscal projections, set out the fiscal objectives, identify the risk factors, and develop the strategy to achieve the objectives and cope with the risks. In the Budget Preparation Guide transmitted to line ministries, the central budget office would ask them to identify and quantify contingent and/or implicit liabilities they will incur during the budget year. And reviewing and deliberating on sectoral programs, the central budget office will pay special attention to the analysis of risk factors, aggregating them and taking them into account in the revision of fiscal projections.

Therefore, the most important task at this point seems to be the establishment of a sound medium-term expenditure framework that would enable the Korean government to move beyond the exclusive focus on the single budget year and toward a medium- and long-term perspective, and assess the fiscal risks from that perspective. Another important improvement should be pursued in the installation of a financial information system. Ideally, the system should be able to provide timely and comprehensive data, including complete balance sheet information, on the whole public sector including local governments and public corporations. Assessing and coping with fiscal risks will become possible only when these basic requirements are fulfilled.

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