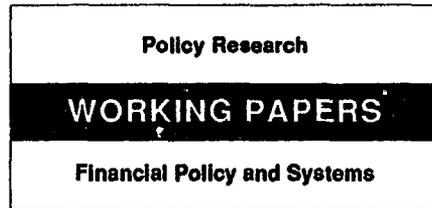


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# Risk Management and Stable Financial Structures

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National risk management and stable financial structures are essential to the long-term economic growth of developing countries. The 1980s taught many nations the heavy cost of the financial distress associated with poor national and sectoral risk management.

This paper — a product of the Financial Policy and Systems Division, Policy Research Department — is part of a larger effort in the department to study issues associated with the structure, operation, and soundness of financial systems. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Maria Raggambi, room N9-033, extension 37664 (March 1993, 20 pages).

Conventional development economics has focused mainly on generating economic growth by mobilizing savings and allocating them wisely among investment opportunities. Savings (external and domestic) were to be mobilized through tax incentives, income, and interest rate policies. Their allocation often involved direct government intervention in the investment process.

After the disastrous results of the 1980s, the new wisdom is to let the private sector generate growth, while the government provides the regulatory and supervisory framework for competitive markets, ensures the existence of level playing fields, and removes obvious cases of moral hazard. But the private sector working under an inappropriate financial structure may do no better than the government in making right investment choices for long-term growth. So governments (which in a financial crisis are responsible for all national debts) should have an effective national risk management strategy, with an understanding of the national balance sheet, and the necessity of a stable financial structure for steady long-term economic growth.

Sheng and Cho argue that it is not only how much investment is mobilized and allocated, but also how investments are financed that matters for an economy's long-term growth. Finance and development are inextricably linked with risk management (both at the sectoral and national levels).

Development is a function not just of promoting the right industries and allocating capital for the high-return investments (asset management) but also of choosing the right financial structure (liability management) — and of the related risks arising from the liability mix chosen.

Sheng and Cho argue that one of the ingredients of the East Asian success is prudent risk management by these governments. Sheng and Cho present five rules for national risk management, concluding, among other things, to:

- Establish fiscal discipline and price stability as the anchor of overall financial stability;
- Encourage asset diversification through industrialization and export orientation, financed by foreign direct investment;
- Avoid sectoral imbalances, such as excessive domestic or external borrowing, including the development of instruments and institutions to absorb shocks;
- Establish strong institutional capacity to assess and contain systemic risks; and
- When the above conditions are not adequately met, retain some policy measures to handle the risk.

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**Risk Management and Stable Financial Structures  
for LDC Inc.**

by

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and

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## **I. Introduction**

Conventional development economics has focused mainly on generating economic growth through the mobilization of savings and the allocation of these savings among investment opportunities. The mobilization of savings involved encouraging external savings as well as generating domestic savings through tax incentives and interest rate policies. Allocation of these savings often involved direct government intervention in the investment process.

After the disastrous results of the 1980s, the new wisdom relies on the private sector to generate growth with the government relegated to the role of regulation and supervision of competitive markets, ensuring the existence of level playing fields, and removing obvious cases of moral hazard.

However, even this new wisdom neglects the importance of how investments are financed, i.e., the financial structure, and the implications of financing for the stability and long-term growth of the economy. Experience suggests that imperfect governments are not adept in picking the winners on long-term investments, but imperfect private entrepreneurs working under an inappropriate financial structure might not do better. Effective risk management at the national level will result in a stable financial structure that is critical to the achievement of steady long-term economic growth.

In the 1980s, many developing countries experienced financial distress, external and domestic, which has carried over into the 1990s. Between 1982-1990, more than 50 countries had to reschedule their foreign debt, and more than 40 countries were involved in major domestic bank restructuring. This same financial distress is now occurring in many of the former socialist economies in transition to market economies. The clear lesson that emerges from the last decade's experience is that once a country through poor risk management stumbles into financial distress, the resulting cost is enormous. Making up for the losses of the banking system, re-establishing the confidence and the credibility of the government policies and the banking system, and recovering international credit standing takes time, and in the process, economic growth and welfare suffer for a substantial period. In contrast, the countries that avoided major domestic financial instability and rescheduling of foreign loans enjoyed interest rates significantly below LIBOR, retained access to international financial markets, and benefitted from substantial foreign investment flows (Demirgüç-Kunt and Detragiache, 1992).

The path of economic transition which many developing countries are currently going through involves a high risk of financial instability, especially when their product and export markets are not well diversified. Moreover, the developing economy does not have a well established institutional and legal framework for effective bank supervision and deep capital markets to cushion shocks. Newly emerging enterprises in these countries are highly geared, with low managerial and financial skills, operating in a repressed financial market and highly distorted interest rate structure. Their access to the international capital market and credit

standing are also more fragile compared to OECD countries. In such a situation, relative price changes during the economic transition can easily worsen banks' loan portfolio. An initial small external shock to a fragile financial environment can quickly lead to higher country risk premiums and drastically curtail availability of foreign capital. Worse, capital flight can create an economy-wide crisis unless the policy makers are able to contain the vulnerability through maintaining sufficient reserves and administrative capacity to handle the crisis.

Therefore, perceived and actual risks of financial instability are substantially higher in developing countries than in industrial countries. This is likely to become more accentuated over time, as the internationalization of banking and further capital account liberalization increases the ease of capital flight and at the same time reduces the effectiveness of traditional macro-economic management tools.

Under this environment, governments may have to devote more attention towards prudential risk management and establishing stable financial structures, even though this may involve some short-term cost of foregone investment and apparently higher profit opportunities.

## **II. From Corporate Finance to National Finance**

Recently many economists have stressed the importance of the processes and institutions by which capital is allocated, and the role of financial institutions in selection or screening of investment projects, as well as their monitoring function (Bencivenga and Smith 1991, Diamond 1991, Gertler and Rose 1992, Levine 1992, Scharfstein 1992, Stiglitz 1989). For example, Stiglitz (1989) emphasized that the way how financing arrangements are made for firms affects how risks are shared between the firms and investors, and how incentives for the managers are structured. A similar argument can be extended to the national level. That is, the way a country finances its industries and development has significant implications on how risks are shared and managed at the national level and for long-term economic growth of the country.

This paper argues that it is not only how much investment is mobilized and allocated but also how investments are financed that matters for the long-term growth of an economy. The new paradigm suggested in this paper is that finance and development is inextricably tied into the question of risk management, not only at the firm level, but at the macro-national level. An important point of departure in this new paradigm is that development is a function not just of **promoting the right industries** and allocating capital for the high return investments (let us call this **asset management**), but also of **choosing the right financial structure** (let us call this **liability management**), and the related risks arising from the choice of liability mix. The traditional development economics focussed mainly on the former, but largely neglected implication of the latter for the long-term growth of an economy. It has been argued by many observers that the success of East Asian economies was due largely to their government's success in picking winners and financing these through policy-based lending. Few have pointed

out that the successful risk management by these government has been a crucial element for the long-term success of their economy<sup>1</sup>.

This paper proceeds as follows. The next Section explains why risk management is so important for the steady long-term growth with simple intuitive examples and cross-country analyses. Section IV discusses some important rules of effective risk management. The last section summarizes and concludes the paper.

### III. Why is Risk Management So Important?

Let us take some simple heuristic examples to see why risk management is so important in the long-run.

**Asset management.** The intuitive logic of this argument on the asset side is very simple. Suppose there are two economies whose growth potential and expected rates of return on capital investment are similar, with similar levels of education, wage rate and technology etc.. Country A has a more concentrated asset mix than country B, and accordingly the risk (as measured by the standard deviation of returns) is higher. In period one, both countries make the same amount of investments financed identically partly by domestic bank loans and partly by foreign loans. Suppose in period two, an external shock affects badly the heavily concentrated industries in country A. As a result, A's current account deficit deteriorates and ex-post economic growth rate becomes lower than expected. A's banking system becomes loaded with substantial nonperforming loans and foreign debt may have to be rescheduled. In contrast, country B may be able to achieve the growth rate more or less as expected because of the stabilizing effects of industries not affected by the external shock (standard deviation of returns are low due to the diversification). In period three, country A will face difficulties in access to external borrowing as a result of its poorer economic performance. This will force it to curtail or reduce its investment plan, depreciate the exchange rate and face higher domestic inflation. In addition, access to foreign loans may cost substantially higher than country B. **This suggests that even though countries may have started with similar economic conditions, over the long term, a country with a more diversified mix of assets can perform better than the country with a concentrated asset mix.**<sup>2</sup>

**Liability management.** On the liabilities side, suppose there are two economies with similar initial economic conditions, products and export mix, but with different financing strategies. In period one, firms in country A financed their investment exclusively through bank

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<sup>1</sup> For a recent view that prudent macroeconomic policies matter in avoiding external debt crises by Asian economies, see Ishrat Hussain (1991).

<sup>2</sup> Brignoli and Seigel (1988) show that, even though the expected rate return of assets are intertemporally independent, the assets with higher risk (standard deviation) will end up with lower growth in the long-run.

loans while firms in country B financed largely through capital and internal finance<sup>3</sup>. In period two, with an external shock, country A's banking system is more likely to be loaded with nonperforming loans, while country B's enterprise sector would be cushioned largely by its capital base. Therefore, the higher the corporate sector leverage in a country, the higher is the risk of instability of the financial sector. In period three, the loss of confidence in country A's banking system and the financial disintermediation would result in lower investment and growth performance. State rescues of ailing enterprises and banks have enormous fiscal costs<sup>4</sup>, while the required stabilization efforts to contain the inflationary consequences of fiscal bail-outs can also dampen economic growth. Bank restructuring and re-establishing depositor confidence take time and domestic investment and economic recovery may suffer significantly in the interim.

A similar argument can be made with respect to financing at the national level. If we regard domestic financing as self-finance or equity capital, a country which finances its investment mostly by domestic savings is likely to absorb external shocks better than one with a high reliance on external debt. While the volume of investments may be constrained by the limits of domestic savings, the country as a whole may be less vulnerable to changes in international interest rates and on exogenous reduction in access to foreign funds than a country heavily dependent on foreign borrowing.

On the other hand, if a country relies mainly on foreign direct investment to finance its domestic investment, it may be able to achieve both higher and more stable patterns of growth, since foreign equity capital is another external shock absorber.<sup>5</sup> Accordingly, the total risk exposure of a country depends not only on its assets mix, but also its liability mix. Other things being equal, the higher a country is leveraged either through domestic or foreign debt, the more volatile its economic performance, with likely long-term consequences of poorer economic growth.

Table 1 compares the growth performance of 98 developing countries (on which data is available) according to their external indebtedness: high debt countries with average foreign debt/GNP ratio over 50 percent and low debt countries with the ratio below 50 percent during 1971-1990. The table suggests that there is a correlation between the debt ratio and growth performance, although this does not imply there is a clear causality between the two variables. It shows that the growth performance of high debt countries was significantly poorer than the growth performance of countries with low debt. It also shows that high debt countries

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<sup>3</sup> Although domestic saving levels may be the same, country A savings are assumed to be in the household sector, which are on-lent via the banking system to the corporate sector, while country B savings are mainly in the corporate sector or in household savings channeled through NBFIs or securities market for equity investment in the corporate sector.

<sup>4</sup> In Chile, for example, these costs incurred over the period 1982-85 have been estimated at 44 percent of Chile's 1985 GNP (Fischer and Reisen 1992).

<sup>5</sup> See Atiyas and Dietz (1992) on how firms with foreign equity are more resilient to financial distress in Colombia.

experienced more unstable growth with significantly higher inflation rate than the low debt countries.

**Table 1: Growth Performance of High Debt vs. Low Debt Countries (1971-1990)**

	High Debt Countries <sup>1</sup> (38 countries)	Low Debt Countries (60 countries)
Average annual real GDP growth rate(%)	2.7	4.5
Standard deviation of growth rate <sup>2</sup>	16.8	1.7
Average annual inflation (CPI: %)	56.4	16.8

<sup>1</sup> High debt countries are those whose average foreign debt was higher than 50 percent of their GDP and low debt countries are those with the ratio below 50 percent during 1971-1990.

<sup>2</sup> Mean-adjusted standard deviation.

Source: World Bank National Account Database, World Debt Tables, various issues, World Bank International Financial Statistics, IMF

One interesting comparison may be the different growth patterns achieved between two resource rich countries: Malaysia and Ghana. At the point of independence in 1957, both countries inherited strong administrative machinery, high education levels and high external reserves. Their major products and exports were however highly concentrated on commodities: Malaysia on rubber and tin and Ghana on cocoa and gold. Beginning in the late 1960s, Malaysia adopted an export diversification strategy, introducing one major export product roughly every five years: timber, palm oil, oil and gas, and finally manufacturing, financed significantly by foreign direct investments. On the other hand, 99 percent of Ghana's exports were concentrated on primary commodities in 1965, improving only slightly to 92 percent by 1989 (Table 4). While both countries undertook different historical paths, and other factors also have affected the actual growth outcome, the diversified economy achieved more stable and higher annual average growth rate (6.9%) over the period 1965-89, even though both countries started with almost comparable levels of per capita income in 1965 (Ghana US\$260 and Malaysia US\$330).

Without underemphasizing other factors in the political economy of growth, the point here is that different national risk management strategies: asset diversification and openness to foreign direct investment (liability management) does matter in terms of long-run growth.

**Table 2: Export Concentration, Growth and Stability of Economies of Ghana and Malaysia (1965-1989)**

	Ghana	Malaysia
Share of primary commodities exports in total exports (%) <sup>1</sup>	99 (1965)	94 (1965)
Average annual growth rate	1.4	6.9
Standard deviation of growth rate <sup>2</sup>	4.1	0.49
Average annual inflation (CPI: %)	45.3	4.6
Memo items:		
Per capita income (US\$)		
1965	260	330
1989	390	2,160

<sup>1</sup> Share of fuels, minerals, metals and other primary commodities in total merchandise exports.

<sup>2</sup> Mean-adjusted standard deviation.

Source: World Development Report, 1991  
International Financial Statistics, IMF

We also compared the growth performance of developing countries during the period 1965-89 for two groups of countries, based on the degree of diversification of their production and exports. The countries which have significantly diversified their production and exports between 1965 and 1989 experienced more stable and higher growth rates than those countries which did not improve their production and export diversification significantly during the period Tables 3 and 4. Again, this does not imply the causality between the two variables but suggests a correlation between them.

**Table 3: Production Diversification and Growth Performance of Developing Countries (1965-1989)**

	Significantly diversified countries (36) <sup>1</sup>	Not significantly diversified countries (40)
Average annual growth rate (%)	5.1	3.2
Standard deviation of growth rate	1.38	2.73

<sup>1</sup> Countries which reduced the share of agriculture in total GDP more than 5 percentage points between 1965 and 1989.

Source: World Development Report, 1991  
International Financial Statistics, IMF

**Table 4: Exports Diversification and Growth Performance of Developing Countries (1965-1989)**

	Significantly diversified countries (31) <sup>1</sup>	Not significantly diversified countries (37)
Average annual growth rate (%)	4.6	3.5
Standard deviation of growth rate <sup>2</sup>	1.31	2.4

<sup>1</sup> Countries which reduced the share of primary commodities in total exports more than 10 percentage points between 1965 and 1989.

Source: World Development Report, 1991  
International Financial Statistics, IMF

#### **IV. National Risk Management**

The concept of managing an economy like a corporate firm is not new. One of the remarkable features of high economic growth in East Asian economies has been their rapid growth with low inflation. Aside from the usual explanatory variables such as well educated human capital, outward-looking industrial and trade policies, an "institutional" or "managerial" view is that policy makers managed these economies (and their finances) as if they were single corporations: Japan Inc, Korea Inc, and Malaysia Inc. Some observers argue that resource allocation in these economies may behave similarly to large multi-national corporations: they may be guided by market signals, but the allocation of the resources and risks among various

competing sectors are not necessarily through market arrangements. However, it may very well be that a major point of departure in economic management in these economies is not the intervention in credit allocation, but how these governments absorb risks of the private sector, or co-insure such risks with the private sector during the development process. In other words, there may have been risk management strategies that have encouraged private sector growth, without the usual negative effects of direct government intervention.

National risk management is a relatively new concept. Policy-makers and regulators in general are quite comfortable with sectoral risk management, with particular focus on risk reduction or amelioration rules and regulations for the behavior of firms in a single sector or financial institutions, including the containment of systemic risks. It is rare, on the other hand, for ministries of finance or central banks to see the "big picture" in risk management. For example, a common problem in many developing countries in the 1980s was the lack of coordinated risk management in its debt (liability) management versus reserves (assets) management. A ministry of finance is likely to minimize debt servicing costs by concentrating on low interest-rate currency borrowing, subjecting the nation to substantial risks of high revaluation losses in the future. On the other hand, reserves management under a central bank would tend to concentrate on high liquidity with consequent low yields that may be optimal from the central bank's objectives, but may have a currency mix that does not minimize the net foreign currency exposure of the nation as a whole.

There are several reasons for this oversight. The first is the segmentation of responsibility within the government itself. The incentives within the government require each ministry or agency to optimize its own objective functions, even though these may be contradictory and sub-optimal for the nation as a whole. The second is even more basic, and is related to the severe data inadequacies available to the typical policy-maker. The national accounts of most LDCs are by and large flow accounts, with almost no sectoral or national balance sheets.<sup>6</sup> Thus, a Minister of Finance cannot engage in asset-liability management like a corporate treasurer even if he wanted to, because he would not have the current information available to do so. Most governments do not even maintain a balance sheet. Cash based government accounting disguise the detrimental effects of off-balance expenditure and hide the consequences of large quasi-fiscal deficits<sup>7</sup>.

As a result of these data inadequacies, fiscal adjustments may not have been adequate in many cases where the governments had absorbed substantial amounts of off-balance sheet liabilities, such as a deposit insurance, credit insurance for sectoral programs and exchange rate guarantees. A major lesson of 1980s is that in a financial crisis, the government is responsible

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<sup>6</sup> For example, the lack of national balance sheets, particularly outstanding stock of FDI in many countries would not facilitate a comparison of debt/equity structure across countries.

<sup>7</sup> In other words, the non-transparency of government accounting does not assist to enforce the hard budget constraint on governments, which can easily resort to off-budget expenditure and monetary creation to escape financial discipline.

for all national debt, irrespective whether it was incurred by the private sector. The Chilean crisis of 1982-85, for example, required the Government to fully guarantee all domestic deposits as well as the external debt of the private sector (Velasco, 1991). This was most dangerous for fiscal and monetary stability, because in a recession, while government revenue falls sharply, larger resources are required to service not only the government's growing domestic and external debt, but also to cover private sector external liabilities, as well as losses in a banking system that is subject to a government (implicit or explicit) deposit guarantee.

### **National balance sheet**

Accordingly, it would be useful to develop a notion of a **national balance sheet** for the effective risk management of an economy. Just as corporate managers manage their risk by changing the structure of their assets and liabilities, policy makers may have to manage domestic and systemic risks through appropriate rules and regulations that shift the national asset-liability mix.

At a minimum, the national balance sheet should distinguish between four domestic sectors: government, enterprises, households and the financial sector, and an external sector.<sup>8</sup> The importance of identifying sectoral balance sheets is to distinguish how different sectors finance their asset base, and how financial imbalances in one sector could trigger off imbalances in other sectors. Indeed, the building of stable financing structure (the liabilities side of the national balance sheet) has been a major pre-occupation of financial sector reform efforts in recent years.

As a result of recent experiences in market shocks in the process of internationalization of banking, as well as the global harmonization of regulation of banking and financial markets, some of the risks in national asset-liability management have become better (but not yet fully) understood. These risks may be categorized into the following:

- \* Market risks (interest rates, exchange rates, prices etc);
- \* Credit or default risks
- \* Regulatory risks
- \* Liquidity risks
- \* Fraud risks
- \* Systemic risks

Clearly, the government has a major role in all of these risk categories, either as a market participant or regulator. For example, macro-economic policies of the government will

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<sup>8</sup> From a national point of view, the national net wealth may be defined as the sum of domestic assets (land, equipment and intellectual property) plus financial claims on foreigners (including foreign exchange reserves), less external claims on the economy, including external short-term and long-term debt, as well as foreign direct and portfolio investment in domestic corporations. Such a "net" national balance sheet would unfortunately not be able to distinguish the large internal sectoral imbalances that could jeopardize growth within an economy.

have a major impact on relative prices: interest rates, exchange rates and domestic prices. Relative price changes, plus Government action or inaction in the legal, accounting and debt recovery framework will affect sectoral solvency and hence determine the size of credit or default risks. Arbitrary or sudden changes in government regulations, such as closing of markets, imposition of exchange controls or nationalization of banks are major regulatory (sometimes called political) risks. Similarly, macro-management of liquidity has significant influence on liquidity at the enterprise level. Enforcement of laws deter fraud behavior. Finally, only the government can insure systemic risks or shocks to the economy as a whole.

National risk management in a fully open economy is complicated by the fact that the private sector can always hedge its own risks through capital flight. Mistakes in government policy can easily trigger capital flight and worsen macro-economic management. This has the impact of reducing the options of governments to tax wealth and income during a crisis to pay for losses.

Consequently, just as a firm will have to have a good understanding of its risk exposures, a policy maker may well have to have a "big picture" of risk exposures in the national balance sheet, so as to manage these risks such that shocks (external, political or natural) will not jeopardize the economy from its potential long-term growth path. For various reasons, East Asian policy makers have tended to follow several basic rules of risk management in their national asset-liability management. These are not risk-averse strategies, but strategies to ensure that high risk-taking are properly financed and managed.

#### Managing financial stability: some basic rules

Those rules can be summarized as follows: (1) establish fiscal discipline and price stability; (2) encourage asset diversification through industrialization and outward-orientation; (3) avoid large sector financial imbalances, including excessive domestic and external borrowing and develop financial instruments and institutions to cushion shocks; (4) establish institutional and administrative capacity to assess and contain systemic risks; and (5) when the above conditions are not adequately met, retain some policy measures to handle the risk.

##### (1) Establishing Fiscal Discipline and Price Stability

With few exceptions, those countries which experienced financial instability suffered badly in the face of high inflation and volatile relative price changes. Inflation distorts relative prices, turn real interest rate negative when they are controlled, or add high risk premium to interest rates where they are liberalized. As a result, funds shift towards speculation in non-tradeables, investment horizons shorten, and financial disintermediation takes place.

High inflation also tends to make the exchange rate unstable, leading to overshooting or undershooting of the exchange rate if not carefully managed. These market volatility can de-capitalize firms rapidly, pushing them towards distressed borrowing, deter long-term investments

and reduce domestic production that leads to higher inflation. Price volatility distorts transparency of information to all market participants, raising information search costs and creating rent seeking opportunities. High market risks have a cost that lowers growth and efficiency in the long run.

In most developing countries, the main culprit for high inflation are large budget deficits. The existence of growing budgetary deficits raises "regulatory risks" - that the government would finance itself either through heavier taxation or inflation tax, or both. Once the sustainability of government expenditure is questioned, tax avoidance behavior increases. Where the government has been lax on its own financial discipline, it can hardly impose financial discipline on the private sector as the latter has greater incentives for speculation and moral hazard behavior (Sheng 1991). Therefore, tax reforms, expenditure control and achieving price stability are important steps to secure financial stability and the robust growth of the financial sector. Fiscal discipline is the anchor of financial sector stability. East Asian economies in general have maintained very prudent fiscal stances and maintained low inflation rates.

## (2) Asset diversification

From a portfolio diversification point of view, capital stocks in different industries, investments in infrastructure and foreign exchange reserves may be viewed as alternative assets. Simple risk diversification theory suggests that risk is minimized when resources are spread widely in assets that have negative or low correlation with each other. Thus, in highly concentrated economies which depend on one key commodity, such as oil, a risk-reducing long-term investment strategy is not to invest in domestic assets (such as property or shares) which are highly correlated with the fortunes of the oil market, but to hold high foreign exchange reserves.

Another way of looking at asset diversification is to view the over-concentration of ownership of resources, whether in the private or public sectors, as risk-prone in the long run, and therefore resources should be distributed in a competitive environment that engender lower risks and higher efficiency. While there are risks associated with industrialization, the broadening of national output widens the tax base, reduces volatility of production and current account position through diversification of markets and export earnings. From a risk diversification strategy point of view, high protection policies expose the nation to higher risks in the long run since resources are likely to be concentrated in inefficient import substituting industries. The development of export-oriented industries is risk-reducing in the long run because the larger pool of foreign exchange earnings can sustain a higher level of external financing. The East Asian economies rewarded export earners by allowing them access in foreign exchange to acquire imported technology and equipment, thus encouraging firms to remain competitive at the international level. On the other hand, many developing countries violated the basic financing rule of using external borrowing only to finance assets that earn foreign exchange (Fischer, 1991). Consequently, they were subject to severe foreign exchange constraints in times of worsening terms of trade.

Inducing foreign direct investment for the development of new industries is an effective way for a country to reduce the risk of the economy: it reduces the risk by diversifying the assets and sharing the remaining risk with foreign partners. Liberalization of trade and foreign direct investment are therefore good policy measures for effective risk management as well as for the promotion of industrial growth within the context of neoclassical framework.

While it may not be clear that private investment is the major source of growth, Figure 1 suggests that low levels of private investment are correlated with low levels of growth.

### (3) Building stable financial structures

As discussed above, national liability management can shape the financial structure. The "safest" liability is equity. For example, a firm which finances its investments wholly through internal equity, would be able to cushion itself much better against interest rate or other external shocks than a highly leveraged firm. The risk of over-diversification of debt can be seen from the problems of borrowers in debt negotiations. The more creditor banks are involved, the higher the risks of delay in debt resolution, which worsens the financial position of the distressed borrower. An economy that relies solely on domestic saving would be much less vulnerable to external shocks, but its growth may be constrained because of limited domestic resources. Accordingly, economies are also subject to the debt versus equity issue facing corporate firms.

#### Debt versus equity

Given different corporate objectives and changing market conditions, there is no single optimal structure of debt/equity ratio for a firm<sup>9</sup> nor an optimal financial market structure for an economy. However, just as a firm builds up capital and liquidity as a cushion against unpredictable market risks, a nation should maintain from a risk management point of view a financial structure that can absorb shocks.

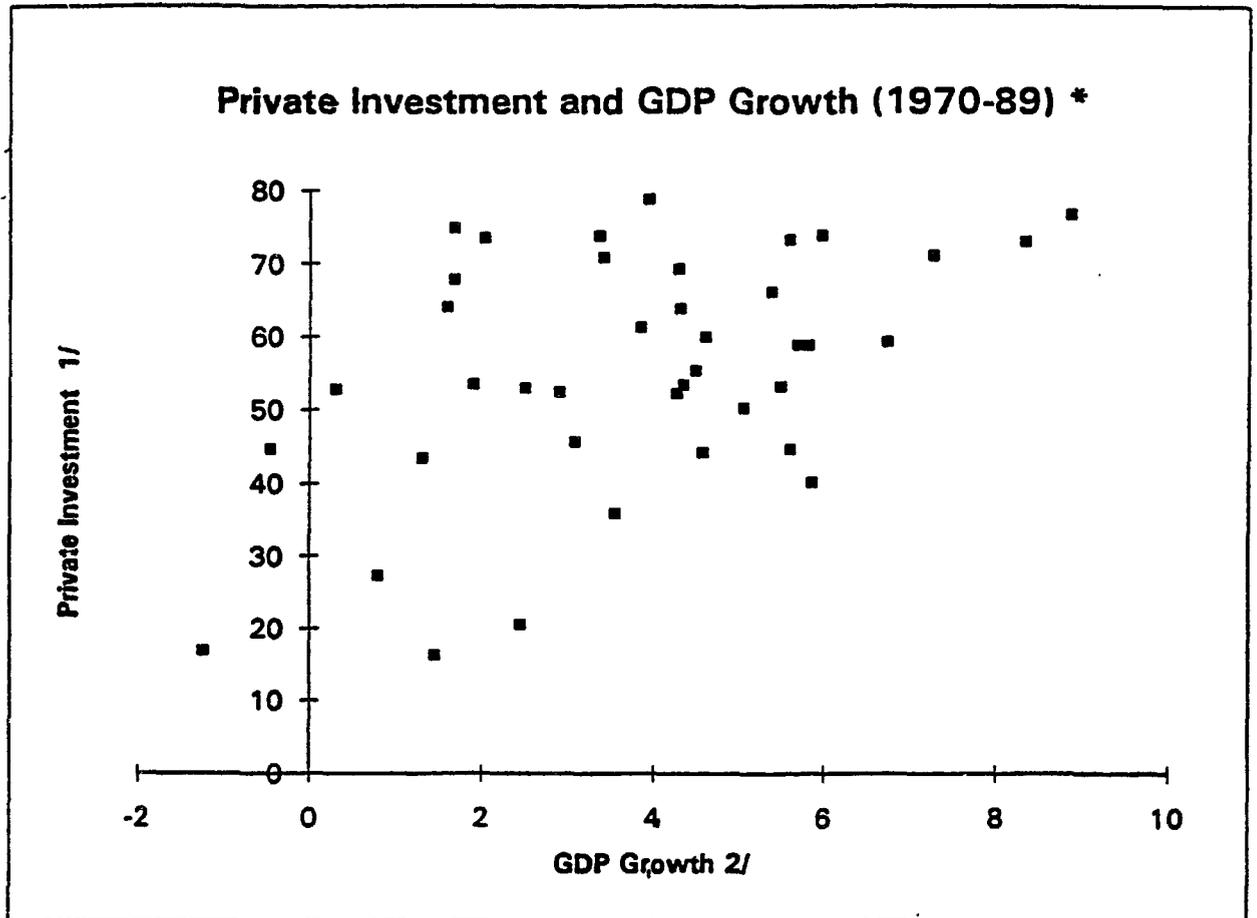
Equity capital has a distinct advantage over debt in that risk is shared between the user and provider of capital and there is no fixed obligation to repay the equity holder.<sup>10</sup> Equity capital is therefore an important cushion to economic shocks and business cycles. The lessons of the 1980s suggest that excessive borrowing in one sector can rapidly destabilize the economy as a whole. Accordingly, building strong equity bases in the corporate sector, reducing credit

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<sup>9</sup> There is considerable active discussion on the optimal financial structure at the firm level. The discussion on the optimal debt/equity structure in the finance literature can be broadly classified into: (i) tax implications on the optimal capital (Miller 1977, Modigliani 1982), (ii) agency cost approach to optimal capital (Jensen and Meckling 1976, Diamond 1986, Jensen 1986, Hirshleifer and Thakor 1989, Haris and Raviv 1990 and etc.), (iii) asymmetric information approach to optimal capital (Ross 1977, Myers and Majluf 1984 and etc.), and (iv) industrial organization approach to optimal capital (Brander and Lewis 1986). See Demircuc-Kunt(1992) for a survey of recent literature.

<sup>10</sup> Although equity capital has distinct advantage over debt with respect to risk sharing, outside equity capital has disadvantage with respect to incentive issues. Because entrepreneurs do not have a fixed commitment ( and because they must share the returns to their effort with the other shareholders) incentives are attenuated (Stiglitz 1989). Ex post, debt could also provide a certain degree of risk sharing through debt reductions and reschedulings.

Figure 1



**Note:** \* For some countries the period covered is different due to data availability.  
 1/ Private Investment as percentage of the total gross domestic investment.  
 2/ Average annual GDP growth over 1970-89.

**Source:** "Trends in Private Investment in Developing Countries, 1990-91 Edition".  
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concentration, strengthening capital adequacy and loan loss reserves in the financial sector, and improving public sector saving are all consistent tools of national risk management.

The nation can build up domestic equity capital in several ways: promoting retained earnings, encouraging foreign direct or portfolio investment, privatization and building stock markets. Stock markets were not major players in capital mobilization for enterprises in the early stages of development of the East Asian economies. In the Meiji period, the large Japanese conglomerates were first formed from the privatization of state-owned industries in armaments, shipbuilding, steel and mining. East Asian economies have tended to use a combination of low (but positive in real terms) lending rates, with tax disincentives against high dividends, to encourage the accumulation of retained earnings and corporate savings. On the whole perhaps with the exception of Japan and Korea, these economies were open to foreign equity capital, especially foreign direct investment for long-term industrial investment which introduced new technology, managerial skills or new markets.<sup>11</sup> The risk of investment is shared between domestic and foreign investors.

Stock markets became more important as banking practices, law and accounting became more established. Medium and large sized firms were able to access new equity to expand production at cheaper rates than bank borrowing. However, active stock markets create a new dimension of risk, since they act as a barometer of public confidence. When an economy is not yet stable, rapid inflows and outflows of short-term foreign portfolio investment could complicate monetary control and magnify macroeconomic instability. Moreover, while the domestic securities market is not well developed and small, foreign portfolio investment may not be a major option for inducing foreign equity capital. Consequently, in the early stages of development, a country may have to rely mainly on promoting corporate savings and foreign direct investments to develop a stronger domestic equity base to finance long term investments.

### **Development of diversified financial instruments**

Just as corporations and banks are concerned with their individual interest rate risks, an economy should be concerned with its interest rate and maturity structures of domestic and foreign liabilities. The soundness of "never borrow short to lend long" and "never lend fixed rates and finance with variable rate" was clearly demonstrated by the US Savings and Loan crisis, where fixed rate long term mortgage loans were financed with short-term variable rate deposits. Sharp interest rate increases in 1981 decapitalized one segment of the financial sector. Many developing countries have also violated these rules, by using credit directives to banks to finance long-term investments (infrastructure plus corporate investments) at fixed rates through the variable rate short-term deposits, thus creating large maturity mismatches in their banking systems. Development banks were not generally successful because of their high concentration of risky loans at fixed rates, without a stable long-term funding base. Inappropriate interest rate policies, directed loans, and large interest rate and maturity mismatches were major causes of financial sector insolvencies in the 1980s. A striking feature of the ability of some East Asian

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<sup>11</sup> See Caprio, Gelb, and Johnson (1989) for the discussion of measures to promote foreign direct investment.

economies, such as Japan, Singapore, and Malaysia to sustain high fiscal deficits was the existence of strong contractual or postal savings institutions.

Developing countries should therefore design financial systems with more diversified instruments and markets which are better able to transform and intermediate risks. Development of long-term financial instruments and equity markets (either through the development of public securities market or development of institutions which provide equity capital) would help to contain the risk of financial instability.

### **Management of foreign exchange risks**

Major errors have been made in the management of foreign exchange risks in many developing countries in the 1980s. First, many developing countries kept their currencies underdepreciated in the fear of inflationary impact of depreciation. An increasing underdepreciation of the domestic exchange rate relative to domestic inflation reduces competitiveness, encourages consumption and a major shift towards non-tradeables, particularly speculation in property. Thus, subsequent abrupt exchange rate adjustments impose severe losses on private sector firms with external debt and strains the debt servicing capacity of the budget. East Asian governments have generally maintained fairly stable real exchange rates and avoided using the exchange rate as an anti-inflation tool. By and large, East Asian economies maintained high foreign exchange reserves relative to imports or external debt.

Second, government external debt management have only belatedly tried to reduce currency mismatches, by borrowing mainly in currencies of the country's export earnings. Initial borrowings in low interest currencies have caused large foreign exchange losses in many borrowers, which have probably been larger in magnitude than five credit losses of the banking system.

Third, unrestricted access to foreign borrowing by firms not used to foreign exchange risks may cause major problems. Both in the Chilean and Argentinean banking crises of the 1980s, the lenders in essence forced the government to take over the external debt of failing private borrowers, with substantial fiscal impact. Almost all East Asian economies have been reluctant to allow unrestricted access to foreign borrowing by domestic firms until very late in the sequencing of financial liberalization reforms.

Finally, a major error was loading central banks with net foreign exchange liabilities. Such central banks were caught with the dilemma of maintaining an exchange rate that would balance the current account of the balance of payments or their own solvency. Allowing the exchange rate to depreciate would worsen the central bank's own financial position. In some cases, central banks were prepared to allow an overvaluation of the exchange rate to protect their own solvency, resulting in massive relative price distortions in the economy. In contrast, most East Asian central banks preferred to maintain high foreign exchange reserves with no foreign exchange liabilities in their balance sheets other than reserve money, and were therefore able to conduct exchange rate management in an autonomous and financially stable manner. The notable exception was the Philippines.

**(4) Institutional and Legal Framework for Bank Supervision**

The strategies discussed above will reduce system-wide risks. However, the financial system could be still fragile if banks do not select sound and profitable borrowers, and monitor and enforce loan contracts effectively. The business of banking and finance is essentially the business of public confidence. The public at large and market participants more specifically expect a degree of official surveillance over the system in which credit and credibility is a unifying force (Corrigan 1987). The financial sector should therefore be closely monitored and supervised by the government.

An important function of financial sector supervision is to develop an institutional and legal framework for enforcing debt contracts, measuring and reporting the solvency and efficiency of borrowers and lenders, and to ensure that systemic risks and sectoral imbalances are not such that the soundness and safety of the financial system is jeopardized. Where the financial sector may have to intermediate high risks, appropriate instruments and adequate capital should be put into place to support such activities. In short, national risk management is an important *raison d'être* of effective bank supervision.

**(5) Financial sector liberalization and risk management**

Financial sector liberalization itself entails high risks as well. A major issue in the design and sequencing of economic liberalization is to engender change without instability. Economic liberalization involve changes in relative prices, which have large wealth and income distribution effects. In the process, certain sectors may experience rapid deterioration of their net worth. The use of sectoral and national balance sheets can identify the effects of such relative price changes and consequently the risks associated with price reforms.

A major lesson of recent financial sector reforms is that the fiscal costs (in terms of actual as well as contingent liabilities) of liberalization could be very large (Caprio, 1992). Large sectoral wealth losses (such as enterprise or bank losses) are shifted to the budget, which may not be in a position to digest such losses in one go, without losing monetary and macro-economic stability. Indeed, when there are insufficient national resources, nor well established institutional framework for prudential regulation, to cushion the shocks, a country may have to take an approach in which distortive regulations are gradually removed, in parallel with the deepening of capital markets, institutional building and supervisory capacity. The proper sequencing is to remove those distortive regulations which can be removed without causing major instability, while others are removed as the market and institutional environments are mature enough to cushion the impact of deregulation. In general, this has been the approach of the East Asian economies.

Financial liberalization in OECD countries have been much more successful, because most OECD countries opened their financial systems during the 1980s, when their financial markets have become mature and well diversified. They had the institutional development and market depth to cushion the shocks arising from market liberalization. They also can spread the costs of external shocks through time while most developing countries do not have this option. For example, recent banking and savings and loan problems did not hamper the US access to

the international capital market, while Korea, despite its remarkable economic success, was on the brink of losing access to voluntary lending from time to time (Fisher and Reisen, 1992).

National risk management therefore suggests that policy-makers should have a clear understanding of the potential risk exposures in their economy and financial sector. This requires good accounting and reliable reporting of sectoral risks, including sectoral balance sheets and net worth. By making the full costs of policy options more transparent, particularly below the line (or quasi-fiscal) costs of government guarantees on private sector risk-taking behavior, policy makers may be able to avoid the large costs associated with taking short run measures that have high long run costs. For example, if policy makers do not foresee the immediate improvement of government finances, it may be premature to liberalize external capital transactions, since the liberalization may strain scarce foreign exchange reserves, worsen the national debt, reduce the inflation tax base and further destabilize the economy.

## V. Summary and Conclusions

This paper argues that national risk management is critical for the achievement of steady long-term economic growth. The neoclassical growth theory focussed mainly on the right "asset choice" without paying much attention to the implication of risks, uncertainties and how investments are financed, i.e., "liability choice" for the long-term growth of an economy. The experiences of many developing countries in the 1980s indicate that once a country fails its risk management and stumbles into financial distress, the resulting cost is enormous. In the process, economic growth and welfare suffers. In the long-run, prudential risk management and establishing stable financial structure are rewarded with a steady and high economic growth.

In order for policy makers to manage risk effectively, they must have a "big picture" on the national economy. Effective risk management at the sectoral level does not necessarily ensure effective risk management at the national level. Although sectoral risk may be hedged against the risk of other sectors, national risk may not be hedged and therefore such risks must be controlled by regulation and supervision. Just as corporations controls firm risk based on asset-liability management, a policy maker should apply national asset-liability management, using a national balance sheet that clearly identifies financial imbalances and the effects on sectoral net wealth due to changes in relative prices.

In general, the successful East Asian economies tended to manage their finances as if their economies were single corporations, with a strategy for asset diversification, and a carefully managed financial structure that minimizes systemic risks without retarding private sector risk-taking. Consequently, their financial sector reforms have been gradualist in approach, but have been quite successful in attaining long-term stable growth.

Some general national risk management rules can be established, based partly on well-known corporate risk management rules: (1) create price stability (stable macro-economic environment) to reduce system-wide risks and uncertainties (and hence transactions costs) for private sector initiative; fiscal discipline is a key anchor of price stability; (2) asset diversification: broaden the production and export (asset) structure through outward orientation, using foreign direct investment, to ensure competitiveness at international levels; build up

foreign exchange reserves when the domestic asset base is highly concentrated; (3) liability management: reduce national and sectoral leverage by strengthening the capital base of corporations and banks, including usage of foreign direct investments; deepening domestic financial markets; improve debt management and avoid large maturity, interest rate and exchange rate mismatches; (4) develop institutional and administrative capacity to assess risk and to contain systemic risk; and (5) sequence financial sector liberalization measures with a clear understanding of the risks involved, and with appropriate institutional strength and fiscal resources to manage the transitional process without losing macro-economic stability.

In sum, the tortoise does win over the hare in the long run.

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