Strategic Framework for Fiscal Resource Mobilization and Life Insurance for Cambodia

Strategic Framework for Fiscal Resource Mobilization and Life Insurance for Cambodia

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Strategic Framework for Fiscal Resource Mobilization and Life Insurance for Cambodia

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Preface

It is widely recognized that disparity in a country's level of socio-economic development results largely from knowledge divide. From this recognition, the Ministry of Finance and Economy (MOFE) of the Korean government has sponsored the Knowledge Sharing Program (KSP) since 2004. The KSP is designed to contribute to the socio-economic development of selected developing and transforming economies by sharing Korea's development experience and knowledge. Cambodia was chosen as a target country for the 2006 KSP implemented by the KDI School of Public Policy and Management.

Through an extensive survey of the Cambodian government ministries and agencies and substantial discussion between the KDI School and Cambodia's Ministry of Economy and Finance (MEF), the KSP decided to tackle the issue of Strategic Framework for Fiscal Resource Mobilization and Life Insurance for Cambodia. It includes three related topics: fiscal balance forecast until 2011, fiscal resource mobilization with emphasis on government bond issuance, and introduction of the life insurance industry. Simultaneous attention to government bond issuance and introduction of life insurance is not an accident, as each needs the other for the success of its own undertaking.

Upon this occasion of publishing the results of the KSP for Cambodia, I would like to express my gratitude to project manager Dr. Sang Woo Nam and all the project consultants including Dr. Ilho Yoo, Mr. Seong-Ho Kim and Mr. Chong Tae Park, and Dr. Seog Young Kim for all their hard work in successfully completing the KSP. I would also like to thank former Deputy Prime Minister Nyum Jin who served as Chairman of the KSP Steering Committee and other Committee members as well as Mr. Kwang Myung Ahn and other officials of the MOFE for their guidance and support. My sincere thanks go to all the Cambodian officials who actively joined the project, particularly to Senior Minister Keat Chhon of the Cambodian MEF who gave strong support to the project and valuable input at the high-level policy dialogue in May 2007. Lastly, I would also like to thank the members of the Center for Economic Cooperation of the KDI School for their dedication and support for the project.

I sincerely hope that the results of this project are able to contribute to the successful development of the government bond market and introduction of life insurance. The policy recommendations in this report, however, are based on Korean experiences and are solely the opinions and recommendations of the authors.

Jung Taik Hyun
President
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Overview

Cambodia achieved a remarkable annual average GDP growth of 9.7% over the five-year period from 2002-06. Inflation has also been stabilized since 1998 to record an average rate of 2.2% over the eight-year period from 1999-2006. In spite of this apparent turnaround in Cambodia's macroeconomic indicators, its macroeconomic situation is still suffering from structural weaknesses.

Background and significance of the KSP for Cambodia

The first of the structural problems is the weakness in government revenue base. Notwithstanding the steady increase in the past years, the estimated current revenue in 2006 remains at 10.7% of GDP. This revenue includes non-tax revenue that exceeds 2% of GDP. Naturally, government expenditure has to be constrained. The estimated 2006 government expenditure accounted for 14.8% of GDP, resulting in a budget deficit of over 4% of GDP.

The second structural problem is an underdeveloped financial market and low level of national saving. The banking sector has a dominant position in the financial market with a negligible role played by non-bank financial intermediaries. In spite of rapid growth of the insurance market in recent years, the market remains small, and life insurance business is yet to be introduced. Furthermore, the money market and the capital markets are practically nonexistent. Although some public bonds were issued recently, a properly working government bond market has not been formed yet.

Under this macroeconomic and financial environment, the Knowledge Sharing Program (KSP) for Cambodia—Strategic Framework for Fiscal Resource Mobilization and Life Insurance for Cambodia—concentrates on the following three topics:

- Fiscal balance forecast of Cambodia, 2007-2011
- Fiscal resource mobilization with emphasis on government bond issuance
- Policy and system of life insurance industry

These three topics are closely interrelated. The forecast for Cambodia's fiscal balance gives a rough idea about the magnitude of potential government bond issuance. Given substantial need for bond issuance, the next task is to determine the methods of issuance in light of its likely effects on the macroeconomic situation, financial market, and government budget. Finally, it is necessary to introduce the life insurance business in order to create sufficient demand for government bonds as well as for the balanced development of Cambodia's financial market.

Government bond issuance is a non-inflationary way of financing government fiscal deficits. Also, it provides a major transaction tool in the money market, while playing a role in the development of the capital market. On the other hand, life insurance companies will invest mainly in long-term securities to match their long-term liabilities. By simultaneously introducing life insurance, development of both the government bond market and non-bank financial intermediaries is expected. Overall, the KSP for Cambodia is a strategic cooperation project that can contribute greatly to macroeconomic stability as well as financial market development.

Major contents of the program and policy recommendations

Fiscal balance forecast of Cambodia, 2007-2011

The tax base in Cambodia remains weak in spite of a series of tax reforms geared toward increasing tax revenue in the past 10 years or so. It can hardly be expected to forecast tax revenue accurately given the short series for relevant data as well as inadequate information about the tax reform efforts. These constraints are particularly serious if attempts are made to forecast revenue from individual tax. Thus, the fiscal revenue forecast was mainly based on regression analyses for total fiscal revenue.

The regression results were not too bad in terms of the accuracy of forecast and other econometric criteria. However, the estimated fiscal revenue elasticity with respect to GDP turned out to be much larger than 1.0, which is understandable given the very low tax revenue until the early 1990s. As an alternative, the revenue forecast was forecast on the basis of the average arc elasticity of revenue with respect to GDP for the recent five years (when the major efforts for increasing tax revenue were largely completed). The average arc elasticity during this period was rather reasonable at 1.19.

For the fiscal balance forecast, we also need to project fiscal expenditure. The level of government spending reflects the government's policy will to a large extent. Thus, one may argue that fiscal expenditure should be exogenously given by the government rather than being forecast. For our purpose, two alternatives were utilized: fiscal projection by the Cambodian government and the result from our regression analysis. The latter method implicitly assumes that the relationship between GDP and fiscal expenditure in the near future will be the same as in the past. The estimated results were largely satisfactory.

Finally, we came up with four different sets of fiscal balance projections for 2007-11 depending on the combination of two different revenue and expenditure forecasts, respectively. Among these, the forecast of fiscal balance based on arc elasticity for fiscal revenue and the Government-forecast fiscal expenditure is judged to be most realistic. The results show that Cambodia's fiscal balance will record a deficit of 4-5% of GDP each year during the 2007-11 period. Even though the Cambodian government expects oil revenue starting from around 2010, the expected revenue varies widely. Most likely, the oil revenue will lead to increased investment in social infrastructure or human capital, making little difference in the projected fiscal deficit.

The expected fiscal deficit may be financed by an inflationary method such as borrowing from the central bank or continued reliance on foreign aid. However, the government had better seriously consider government bond issuance, which will also contribute to the development of the money market and the capital market. Of course, the government should make sure that the bond issuance does not result in excessive increase in government debt or loss of fiscal discipline.

Fiscal resource mobilization with emphasis on government bond issuance

Government bond issuance amounting to 4-5% of GDP annually would not be overly burdensome for the time being. Given the large amount of liquidity in the banking sector, the issuance of government bonds to banks would not lead to serious crowding out – squeeze on loans to corporations. In light of the low level of financial deepening for Cambodia, there should be room for additional savings mobilization in the household sector if adequate interest rates are given. Once the decision is made to issue government bonds, there are many details to be worked out for a successful issuance. They include target group, currency choice, maturity, interest rates, and liquidation infrastructure.

Target group. Government bonds had better be issued to banks and other financial institutions. The purchasers may hold the bonds themselves or sell to final/retail investors. This method has several merits. First, it can avoid the possibility of bank liquidity crunch that may result from the withdrawal of deposits for the purpose of buying government bonds by retail investors. Second, putting the necessary infrastructure in place for the wholesale and retail sales of the bonds will contribute to the development of the broader bond market. Third, by broadening the investor base through the resale of the bonds by wholesale investors, the government will be able to lower the capital cost as well as mobilize additional savings from the informal financial market.

Currency of denomination. The Cambodian economy is mostly dollarized in financial and commercial transactions. However, government revenue is secured largely in the local currency, riel. Thus, government debt should also be denominated in riel to minimize currency mismatch. This is expected to encourage people to make transactions in riel, contributing to enhanced confidence in their currency. Now may be the right time for Cambodia to gradually pursue dedollarization since it has achieved macroeconomic stabilization in terms of inflation and the exchange rate in the past 10 years or so. With progress in dedollarization, Cambodia will be able to have an independent monetary policy and seigniorage gain. In the beginning, a larger portion of government bond issue may have to be denominated in US dollars, with a gradual increase in the portion of riel denomination in response to the market reaction.

Interest rates and maturity. For a successful issuance of government bonds, the interest rates should be competitive enough. Compulsory allotment of the bonds issued at below-market rates to financial institutions is not viable and is detrimental to the long-term development of the bond market. The government should see bond issuance from the perspective of developing the money and capital markets rather than being narrowly concerned with the borrowing cost. Initially, the issuance may start mainly with one-year or three-year bonds, lengthening the maturity in response to market reactions.

For the purpose of lowering the borrowing cost, the government may exempt income taxes on the interest income from government bonds for some time. Also, as an incentive to hold government bonds, the bank supervisory agency may treat the bond favorably in its regulation of bank liquidity (or recognize it as secondary reserves).

Liquidation infrastructure. It is very important for financial institutions purchasing government bonds to be able to liquidate the bonds if necessary. Otherwise, they will be rather reluctant to buy the bond. There are two ways of liquidating government bonds. One is the repurchase (RP) market where funds can be borrowed by using government bonds as collateral. The RP market is an essential part of the money market in most countries and is indispensable for efficient monetary and credit policy. The other is the secondary bond market where government bonds can be traded. The secondary bond market function may be performed by dealers (banks or other specialized companies) or an exchange. The existence of dealers ensures the certainty of liquidation, but the exchange may be more efficient in their matching of potential sellers and purchasers.

Policy and system of life insurance industry

Currently, there are three non-life insurance companies and one reinsurance company in operation in Cambodia. However, life insurance has yet to be introduced. Actually, a few Asian insurance companies are about to establish joint-venture life insurance companies.

Adjustments to the existing legal framework for the insurance business are under way to incorporate life insurance. Prospects for life insurance may not be bright for the time being given generally low income level, experience with high inflation, unfamiliarity with insurance products, and the lack of relevant statistical data. The following policies and systems are recommended for the creation of the basic environment for introducing life insurance.

Separation of life and non-life insurance. Insurance business deals with risks. Thus, it is not recommended to combine life and non-life insurance in a corporation from the perspective of risk management. The existing legal framework in Cambodia does not clearly separate the two types of insurance.

Mortality table. A mortality table is essential data for the design and premium computation of insurance products. Insurance companies and the regulatory authorities should work together to accumulate relevant data and produce their own mortality table. Before the table is constructed, the Cambodian life insurance industry is advised to utilize the mortality table of a country whose life expectancy is longer by ten years or so.

Insurance products and sales methods. Given the low level of income and familiarity with insurance, it will take a longtime for people to purchase insurance products voluntarily. Thus, in the beginning, compulsory group insurance may be promoted for business enterprises and other institutions. In order to reduce any resistance to the compulsory group insurance, tax incentives may be provided while attempting to increase people's familiarity with life insurance. Insurance agents usually play an important role in the early stage of the life insurance industry in the promotion and sales of insurance products. The current unrealistic regulations on insurance agents should be relaxed in order to enhance their role. Regarding the design of insurance products, emphasis may be placed initially on savings products with some features of protection and products for the education of children. For the savings products, variable interest rates are recommended so that insurance companies can remain solvent when market interest rates show a downward trend.

Establishment of an insurance center. For the development of the life insurance industry, some key institutions are needed to operate the actuary system and to conduct research and education. However, it will take some time for these activities to be actively undertaken in Cambodia. Thus, it is advised to establish an insurance center which will perform all these functions.

Protection of policy holders. Public confidence is the key to the development of the insurance business. Thus, the government has to have a transparent and consistent policy, creating a unit which will mainly be concerned with the protection of policy holders. The association of insurance companies should provide adequate information about insurance products to policy holders and the general public. For insurance companies, risk management is essential for the prevention of financial distress. Bond market development is a critical requirement for their long-term asset management. Life insurance companies may also consider entering into the microcredit market for policy holders and other small borrowers without collateral.

Chapter 1

Improvement of Cambodian Fiscal System and Fiscal Balance Forecast 2007-2011

Summary

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As in all other transition economies, Cambodia suffers from the lack of a well-functioning fiscal system, particularly in the area of taxation. Taxation, which is one of the most important tools of economic policy, is essential for a developing country like Cambodia to achieve fast growth.

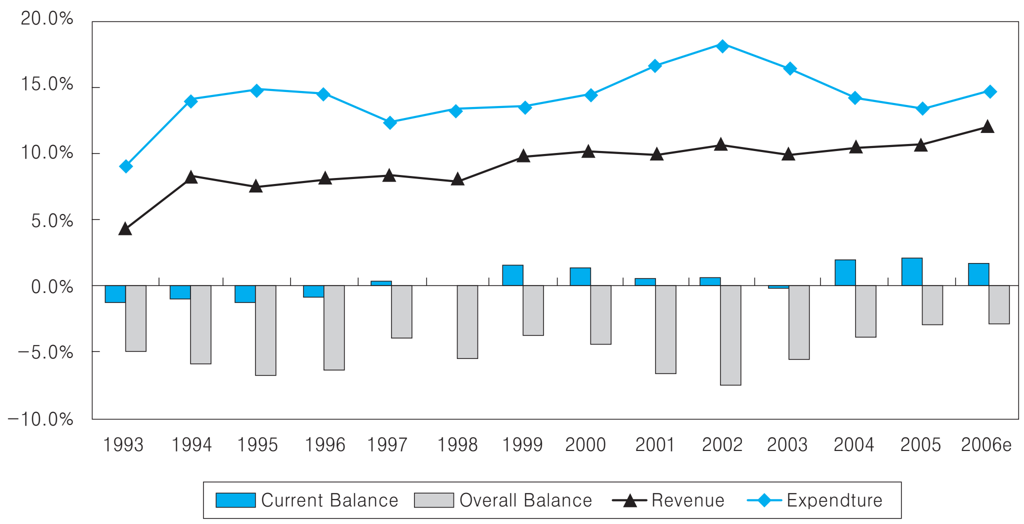
The Cambodian government has been trying to raise tax revenue effectively and succeeded somewhat in doing so. There have been two major tax reforms since 1993 and a modern tax system has been established. As a result, the tax burden ratio has increased to higher than 10% recently from 4-6% in the mid 90's. On the expenditure side, the chronic deficit problem is the most important one. As mentioned, there are many areas where expenditures are urgently needed, while tax revenue is not sufficient, causing deficit. Major reform measures are as follows:

- the introduction of a new tax ; e.g., introduction of a consumption tax on imports
- increase tax rates ; e.g., higher ad valorem duty rate on petroleum
- new taxes were introduced : wage tax, 20% excise tax on gasoline
- higher duty on petroleum products, an increase in the turnover tax
- New Law on Taxation (LOT) was enacted in 1997
- improvement in tax administration : establishment of a Large Enterprise Bureau
- in 1999, single 10% VAT replaced the turnover tax and consumption tax on imports
- enhancement of tax (and customs) administration was also made

Even with these recent improvements, there remains much to be desired in the public finance of Cambodia. The tax system and administration should be improved further. Expenditure must be streamlined and rationalized. By doing that, Cambodia may escape from the trap of chronic fiscal deficit.

Further reform measures are summarized as follows: First, broadening the tax base is most important. Besides, considering the imbalance between tax and non-tax revenue, domestic and international tax revenue, it is particularly important to broaden the domestic tax revenue first. In this regard, the Cambodian tax department should make considerable effort to broaden the income tax base. For this, enhancing the level of the tax administration, through better auditing, stricter penalty system, and educating tax officials is necessary. Constructing a database on personal income tax is also very important. Finally, reduction of cash transactions and the informal sector is necessary. Obviously, this last task can only be carried out with the help of government and the general public. To improve customs administration and reduce smuggling, good cooperation among the government agencies is necessary. More use of information technology is also important. Finally, streamlining tax incentives on all taxes is necessary. In this regard, the Korean case is a good reference.

Figure 1 ●● Trend of Fiscal Balance 1993-2006: Cambodia



Also, as another main purpose of this paper is to forecast the fiscal balance of Cambodia during 2007-2011, this will comprise the second part of the paper. A major tool of analysis is the ordinary least square, which is a standard tool for this kind of analysis. For this, point (GDP) elasticities of tax revenues—total or individual—are estimated first. Based on these estimates and GDP forecasts, future tax revenues are forecasted.

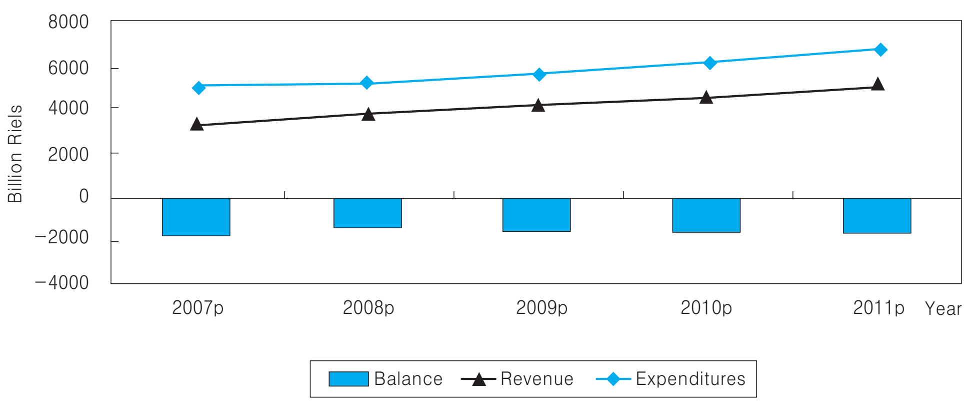
The main limitation in doing this is the shortage of time series data because reliable data for Cambodia is available only after 1993 when the political turmoil ceased. Because of such limitations, we also tried some other methods. Most important among them is the estimation based on arc elasticity. This method, which is widely used by the Korean government in short-run estimation, is very useful, although it is not rigorous theoretically.

We compare these forecasted values with the forecasted government expenditures so the fiscal balances can be estimated. There are four possible scenarios for the estimation: Scenario 1-1 is a combination of revenue forecast based on point elasticity and the expenditure forecast by the regression while scenario 1-2 is the case of the former combined with the revenue forecast by the Cambodian government. Scenario 2-1 is a combination of the revenue forecast based on arc elasticity and our revenue forecast while scenario 2-2 is that of arc elasticity forecast combined with the Cambodian forecast. Results of these different scenarios show that the huge fiscal deficit is inevitable if the current trends of expenditure continue and no tax reform is carried out. Results of the most realistic scenario are as follows:

Table -1 ●● Fiscal Balance Forecast (Scenario 2-2)

	Total Revenue	% GDP	Expenditures	% GDP	Balance	% GDP
2007p	3,364.5	11.0%	5077.0	16.6%	-1,712.5	-5.6%
2008p	3,730.6	11.2%	5204.1	15.6%	-1,473.6	-4.4%
2009p	4,134.1	11.4%	5666.8	15.6%	-1,532.7	-4.2%
2010p	4,584.3	11.6%	6132.9	15.5%	-1,548.6	-3.9%
2011p	5,084.2	11.8%	6711.9	15.5%	-1,627.7	-3.8%

Figure 2 ●● Fiscal Balance Forecast (Scenario 2-2)



In sum, a budget deficit is inevitable even if revenue from sale of oil is not counted (the use and size of which is not fixed yet). Problems caused by big deficits are well-known. Inflation, crowding-out effects, increase in burden on future generations and so on are all negative side effects of fiscal deficit. All of these factors will decrease the growth potential of the economy. Besides, these problems become more serious because interest payments could be another cause of additional deficit if the deficit becomes too big. In other words, a nation may fall into a vicious cycle where new to make interest payments is necessary. Therefore, it should be emphasized again that reforms both on expenditures and revenues should be carried out as planned.

Then, how can the Cambodian government resolve the deficit problem? Although there are some measures such as borrowing from the central bank, the issuance of bonds must be the most realistic measure to do that. It is not easy, however. The most serious obstacle in doing so is that the bond market is not well developed. Therefore, it is also important for the Cambodian government to put considerable effort into developing the bond market at the same time.

Chapter 1

Improvement of Cambodian Fiscal System and Fiscal Balance Forecast 2007-2011

1. Introduction

As in all other transition economies, Cambodia suffers from the lack of a well-functioning fiscal system, particularly in the area of taxation. Taxation, which is one of the most important tools of economic policy, is essential for a developing country like Cambodia to achieve fast growth.

It goes without saying that public finance plays an important role in the growth of a country. It is particularly so in the early stage of development because the government leads the private sector in that stage. Provision of adequate SOC is a good example. Due to the above mentioned retarded tax system and the poor tax base, however, Cambodia inevitably has had a lack of funds needed to propel fast growth.

The Cambodian government has been trying to raise tax revenue effectively and succeeded somewhat in doing so. There have been two major tax reforms since 1993 and a modern tax system has been established. As a result, the tax burden ratio has increased to higher than 10% recently from 4-6% in the mid 90's. Although this is indeed a big achievement, a tax burden ratio of around 10% is not enough compared to the level of Korea, which was around 15% in the early stage of development, let alone the current level which is greater than 20%.

On the expenditure side, the problem of chronic deficit is the most important one. As mentioned, there are many areas where expenditures are urgently needed, while tax revenue is not sufficient, leading to deficit. Although much has been done for the reform of the fiscal system, earning praise for supporting of macroeconomic stability, the deficit problem has not been resolved.

Even with these recent improvements, there remains much to be improved in the public finance of Cambodia. The tax system and administration should be improved further. Expenditure must be streamlined and rationalized. By doing so, Cambodia may escape from the trap of chronic fiscal deficit.

As one of the main purposes of this chapter is to discover reform measures to enhance revenue collection, which may ultimately reduce the fiscal deficit problem in Cambodia, it is necessary to touch on the general fiscal policy problem in Cambodia. Even though there has been much progress on the fiscal policy and system, Cambodian public finance leaves much to be desired yet. Particularly, measures to reduce fiscal deficit are a part of that discussion. This together with the general discussion on the fiscal policy of Cambodia will comprise a part of the analysis of this chapter.

Also, as another main purpose of this paper is to forecast the fiscal balance of Cambodia during 2007-2011, discussion on this subject will make up the second part of the paper. The major tool of the analysis is the ordinary least square method, which is a standard tool for this kind of analysis. For this, point (GDP) elasticities of tax revenues—total or individual—are estimated first. Based on these estimates and GDP forecasts, future tax revenues are forecasted.

The main limitation in doing this is the shortage of time series data because reliable data for Cambodia is available only after 1993 when the political turmoil ceased. Because of such limitations, we also tried some other methods. Most important among them is the estimation based on arc elasticity. This method, which is widely used by the Korean government in short-run estimation, is very useful, although it is not theoretically rigorous. In this sense, it is rather an art more than a science.

Therefore, there are many different scenarios for the revenue forecasts. We compare these forecasted values with the forecasted government expenditures so that the fiscal balances can be estimated. Results of these different scenarios show that a huge fiscal deficit is inevitable if the current trends in expenditure continue and no tax reform is carried out. It would remain so even with the extra revenue from sales of oil.

The rest of the paper will be organized as follows. In the next section, a brief summary of recent tax reform will be presented. In section III, Korean experience emphasizing tax burden ratio and fiscal balance will be discussed to draw some implications for Cambodia. In section IV, total revenue and fiscal balance will be forecasted. In section V, some policy suggestions will be given for issuing government bonds to resolve the fiscal deficit problem, which is followed by a brief conclusion in the final section.

2. Public Finance in Cambodia

2.1. Recent Fiscal Reforms (Revenue) and Their Consequences

Since 1993 when the Khmer Rouge regime was expelled, reforms have been carried out in many areas of the economy. The fiscal sector is no exception. In 1992-3 and in 1998, there were two major tax reforms. As a matter of fact, modern taxation did not exist until the early '90s, as was the case in most other transition economies. Presumably due to this, total government revenue captured only 4-6% of GDP from 1990-93. However, thanks to the two tax reforms mentioned above, the tax burden ratio increased to higher than 10%.

The first credible steps toward revenue reform were made after 1993, and succeeded in eliminating central bank financing, which led to improved macroeconomic stability. The reform program covered all aspects of Cambodia's revenue system concerning tax policy and tax and customs administration. These successful measures included the introduction of a new tax (e.g., introduction of a consumption tax on imports), increased tax rates (e.g., higher ad valorem duty rate on petroleum products), and improved customs administration. As a result of these efforts, total revenue increased to 9.5 percent of GDP compared to 4.4 percent in 1991.

In 1998-9, another reform was carried out. The new government formed after the July 1998 election has initiated important reform measures as follows:

- New taxes were introduced : Wage tax, 20% excise tax on gasoline
- A higher duty on petroleum products, an increase in the turnover tax
- New Law on Taxation (LOT) was enacted in 1997
- Improvement in tax administration : establishment of a Large Enterprise Bureau
- In 1999, single 10% VAT replaced the turnover tax and consumption tax on imports
- Efforts to enhance tax (and customs) administration were also made. For this, Technical Cooperation Action Program (TCAP) was introduced.

As a result, total revenue increased to 10.6% in 2005 from 8.2% in 1996, due to these reforms (except in 1997-8, when total tax revenue stagnated because of political instability). During the period from 1996 to 2006, tax revenue increased 4 fold from 534 Billion Riel in 1996 to 2315 Billion Riel in 2006, reflecting government efforts to promote revenue collection through successful implementation of the value added tax (VAT), as well as the introduction of tax audit. Improvements in tax administration also contributed to better revenue performance. For example, the collection of tax arrears increased: $1.5 million in 2001, $5.8 million in 2002, and $18.7 million in 2003. This was indeed a remarkable achievement.

Table 1-1 ●● Current Revenue Performance 1996-2006

	1996	2000	2003	2005	2006e
GDP at current price (Billion Riels)	9,190.7	14,089.3	18,395.6	25,535.0	29,157.5
GDP at current price (Million US$)	3,481.3	3,651.0	4,627.8	6,239.8	7,084.0
Domestic Revenue (Billion Riels)	749.1	1,422.9	1,821.4	2,719.2	2,968.8
Domestic Revenue (as % of GDP)	8.2%	10.1%	9.9%	10.6%	10.2%
Capital revenue	0.4%	0.2%	0.2%	0.6%	0.1%
Current revenue	7.7%	9.9%	9.7%	10.1%	10.1%
Tax revenue	5.8%	7.4%	6.9%	7.8%	7.9%
Tax revenue(Central Gov.)	5.8%	7.4%	6.7%	7.5%	7.5%
Direct taxes	0.3%	1.0%	0.9%	0.9%	1.1%
Indirect taxes	1.8%	3.6%	3.7%	4.4%	4.3%
Tax	0.0%	0.8%	1.1%	1.3%	1.5%
Customs	0.0%	2.9%	2.6%	3.1%	2.8%
Int'l trade taxes	3.7%	2.8%	2.1%	2.2%	2.1%
Non tax revenue	1.9%	2.5%	2.8%	2.3%	2.1%
Non tax revenue(Central Gov.)	1.9%	2.5%	2.8%	2.2%	1.9%

A report by the Ministry of Finance and Economy summarizes this development as follows:

The significant increase in revenue was primarily accounted for by implementing measures that had already been included under the 1997 Law on Taxation, such as the VAT. Discipline in fiscal policy management was also improved by strictly avoiding ad-hoc tax and customs duties exemptions. In addition, an effort was made to strengthen the MEF's authority to collect non-tax revenues from line ministries, as evidenced by the timely transfer of funds associated with the garment quota auction revenue. Non-tax revenues increased significantly, reflecting efforts made to collect garment quota and forestry revenue in a transparent manner. The VAT has served not only to enhance revenue, but also to improve the efficiency of the tax system by simplifying the tax structure, widening the coverage and reducing cascading, which were major shortcomings under the previous turnover and consumption taxes.

On the administrative side, attention will be given to tackling staff integrity, improving procedures and information systems and strengthening collection enforcement. In this regard, the Tax Department will adopt selective methods to detect fraudulent invoices, supported by improvements in audit activities and introduce mandatory VAT payments through the National

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Bank of Cambodia for the largest taxpayers. Moreover, a reporting system will be established to follow up, at HQ level, the evolution of tax arrears and monitor collection enforcement activities of tax offices. To ensure enforcement, salient information has been collected, including: ageing of account by tax, interest and penalties collected; number of accounts; dollars outstanding, budget to actual; opening to closing inventory; and collection to liabilities. The number of auditors has been increased to cope with enforcement compliance. The Internal Audit Unit of the Tax Department has also been strengthened to ensure good governance.

Indirect taxes (VAT, excises, and import duties) are the most important sources of tax revenue, generating more than 4 percent of GDP or about 54 percent of total tax revenues in 2006. VAT collection has improved rapidly from 385 billion Riel in 2000 to 838 Billion Riel in 2006, showing that the tax is buoyant, despite increasing exemptions. The introduction of VAT enhanced revenue and improved efficiency of the tax system by simplifying the tax structure, widening the coverage, and reducing cascading.

Non-tax revenue has increased significantly from 175 Billion Riel in 1996 to 615 Billion Riel in 2006, reflecting increased collection of visa fees, tourism income, civil aviation, posts and telecom, and introduction of structural revenue measures, such as renegotiation of contracts with private sector providers. Measures to improve collection of non-tax revenue included: the recovery of telecommunication companies; introduction of visa stickers; license fees on casinos; and direct transfer of proceeds from rental fees to the National Treasury.

In <Table 1-2>, breakdown of total revenue in various categories is presented. Above mentioned observation by Cambodian MEF is certified by this table.

Table 1-2 ●● Revenue Performance 1996-2006

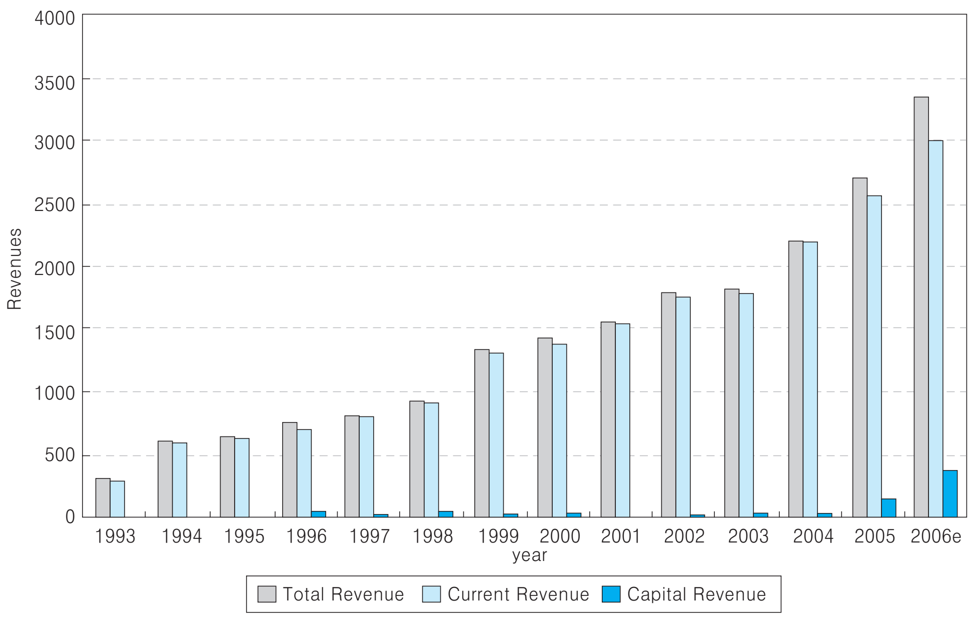
	1996	2000	2002	2005	2006e
GDP at current price (Billion Riels)	9,190.7	14,089.3	16,768.2	25,535.0	29,157.5
Budget revenue (% GDP)	8.2%	10.1%	10.7%	10.6%	10.2%
Domestic Revenue (Billion Riels)	749.1	1,422.9	1,786.1	2,719.2	2,968.8
Tax Department	90.6	243.3	317.7	635.7	885.4
Customs Department	443.7	797.0	951.6	1,354.1	1,429.7
Financial Affairs Dept.	188.1	347.9	497.6	570.5	568.2
Other Institutions	214.8	382.6	516.9	729.4	653.7
Current Revenue	709.9	1,393.6	1,769.9	2,567.6	2,930.7
Tax Revenue	534.3	1,040.3	1,269.3	1,989.8	2,315.1
Tax Revenue (Central Gov.)	534.3	1,040.3	1,227.3	1,911.1	2,189.2

Direct Taxes	26.5	135.6	131.8	222.4	323.2
Payroll tax	2.7	13.2	19.4	36.0	49.4
Profit tax	18.5	115.1	102.8	172.0	254.7
Land and property	5.3	7.3	9.7	14.5	19.1
Indirect Taxes	163.7	514.2	671.7	1,116.1	1,258.7
Turnover tax	27.4	12.6	7.9	11.2	13.9
Value added tax (VAT)	70.4	385.7	449.4	719.1	838.2
Domestic	20.6	72.9	102.8	257.1	330.3
Imports	49.8	312.8	346.6	462.0	507.9
Excise duties	56.6	112.7	210.4	380.0	399.5
Domestic	6.9	19.0	29.2	60.4	85.0
Imports	49.8	93.7	181.2	319.6	314.5
Others	9.2	3.2	4.0	5.8	7.1
Int'l Trade Taxes	344.1	390.5	423.8	572.6	607.3
Imports	331.2	372.8	407.9	551.3	581.0
Petroleum	99.7	162.1	118.4	123.5	114.0
Other goods	231.5	210.7	289.5	427.8	467.0
Exports	8.1	15.9	14.4	18.9	22.2
Others	4.8	1.8	1.5	2.5	4.1
Tax Revenue (Prov.)	–	–	41.9	78.7	125.9
Non Tax Revenue	175.6	353.3	500.6	577.8	615.6
Non Tax Revenue (Central Gov.)	175.6	353.3	500.6	563.0	559.9
Fishery	7.1	9.9	8.8	7.4	7.0
Forestry	27.5	41.0	14.9	3.3	2.3
Factory leases	10.1	5.2	7.7	5.0	7.3
Civil aviation	17.1	24.8	33.5	30.1	22.3
Royalties	5.1	11.8	3.1	1.5	1.7
PTT	63.6	92.0	122.6	122.9	69.9
Other non tax Revenue	45.1	103.2	203.9	317.5	373.5
Non Tax Revenue (Prov.)	–	–	–	14.9	55.7
Capital Revenue	39.2	29.3	16.3	151.6	38.1
Privatization	21.6	22.9	16.1	142.6	28.1
Other capital revenue	17.6	6.4	0.1	9.0	10.0

Source: Ministry of Economy and Finance

In <Figure 1>, the trend of total revenue is shown. As explained, it clearly shows that there was a big increase in total revenue recently.

Figure 1-1 ●● Trend of Total Revenue



2.2. Evaluation of the Current Revenue System

Overall, it can be said that much progress has been made in the revenue system in Cambodia. Yet, it leaves much to be desired. As Cambodian MEF admitted, further comprehensive reform in the revenue system is essential for enhancing growth and alleviating poverty in Cambodia. It is not our attempt, however, to touch on every aspect of the Cambodian fiscal system. Rather, we will focus only on the problems related to revenue performance. The following summarizes underlying weaknesses in the current fiscal revenue system.

2.2.1. Narrow tax base

Cambodia's tax base is extremely narrow compared to other countries, and needs to be broadened. The following case reported by Cambodian MEF clearly shows how narrow the tax base is:

Revenue from direct tax accounted for only1.1 percent of GDP in 2006. One of the factors that explain the ineffectiveness of these taxes lies in the level of exemptions. For example, with a threshold of CR 6 million of annual turnover for the profit tax, more than 90 percent of companies filing turnover tax returns can be exempted from the tax. However, increasing the scope of direct taxation can only be done commensurate with improvements in tax administration. Currently, half of total imports are not dutiable, and apart from foreign aid-related imports, the majority of exemptions (about 70 percent of total exempted imports) are made under the Law on Investment.

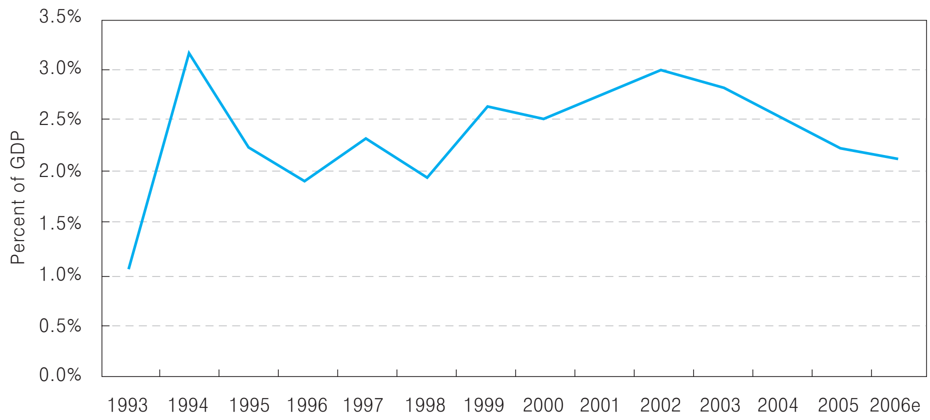
As a matter of fact, it is not so surprising, considering the fact that Cambodia is still in the very early stage of development where the narrow tax base could be a “natural” or “common” phenomenon[1] It does not, however, mean that the government should give up the effort to widen the tax base. On the contrary, broadening the tax base is necessary. It is particularly so for domestic taxes as explained in the following section.

A factor which narrows the tax base is the abuse of tax incentives. Like many counties in the world (including Korea), Cambodia relies heavily on tax incentives to promote growth and to support some industries and classes. Some of them are effective and necessary[2], but some are clearly abused and their effects are dubious. As pointed out in the MEF report, their effectiveness in attracting incremental investments—above and beyond the level that would have been reached had no incentives been granted—is often questionable. Maintaining such ineffective tax incentives will only narrow the tax base. Thus, tax incentives should be streamlined.

Broadening the tax base is also important considering the fact that non tax revenue captures a large share of total revenue (see <Figure 2>). It was as high as 3% of GDP and more than 30% of total revenue. Although that share has been reduced recently, it is still very high and is certainly not normal.

1 _ For example, tax burden ratio in Korea was less than 10% until the mid 60’s (see <table 3> in section III.
2 _ Cambodian MEF report asserts that there are such effective and justifiable tax incentives as follows: Tax incentives can be justified if they address some form of market failure, most notably those involving externalities (economic consequences beyond the specific beneficiary of the tax incentive). For example, incentives targeted to promote high-technology industries that promise to confer significant positive externalities on the rest of the economy are usually legitimate.

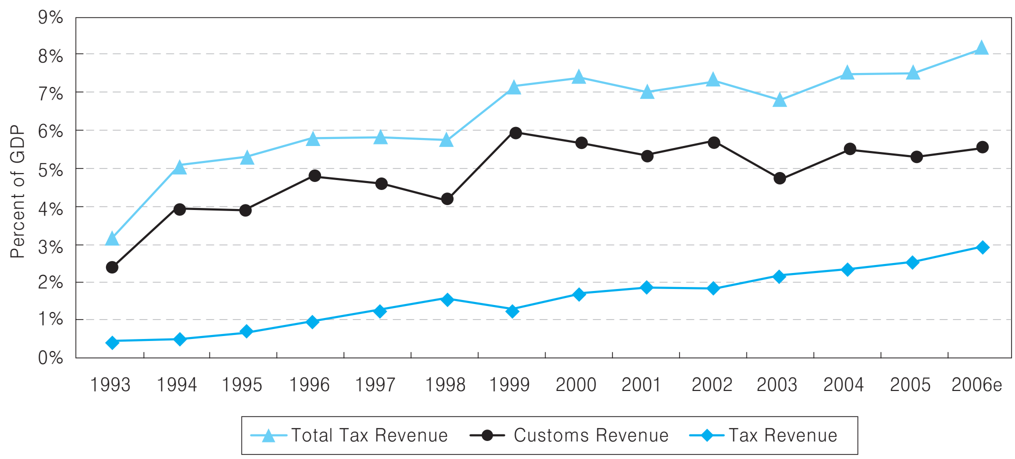
Figure 1-2 ●● Trend of Non-tax Revenue



2.2.2. Heavy reliance on international tax

As can be seen in <Figure 3>, the share of customs and duties is very (too) high in Cambodia. It relies heavily on international taxes with customs duties, export duties, VAT on imports, and excises on imports, generating more than 80 percent of tax revenue.

Figure 1-3 ●● Trend of Tax Revenue By Sources

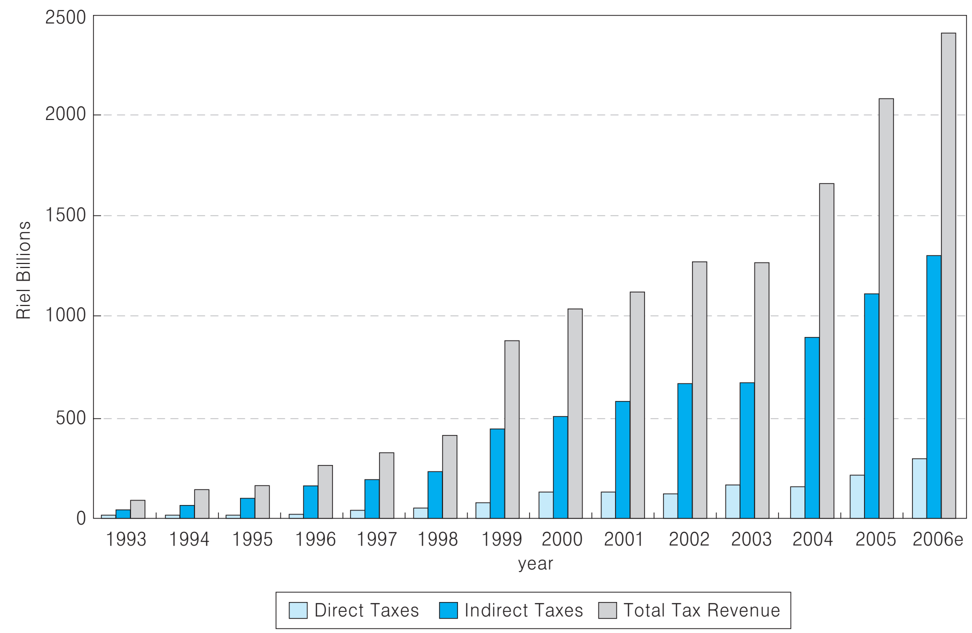


This, also, is a common phenomenon that can be found in developing countries in the early stage of development. Thus, there will be a natural reversal of the shares of two parts. Besides, tariffs and excises are currently being restructured to prepare for AFTA and WTO accession. Active efforts by the government, however, to broaden the domestic tax base are necessary as well.

2.2.3. Heavy reliance on indirect tax

Cambodia heavily relies on indirect taxes. As can be seen in the following diagram, the share of indirect tax revenue is more than three times that of direct taxes. This may not be good for equity. This is largely due to inadequate collection of personal income tax, which is caused by the lack of proper information and data to track individuals' income. As a matter of fact, there is no "optimal" direct-indirect tax ratio. Even if that is taken into account, this imbalance seems to be too big. Thus, the balance should be restored. Income tax should be one of the major revenue sources like in many other countries. It is hoped that the share of this tax will increase with the improvement in data collection and introduction of IT into the tax system.

Figure 1-4 ●● Trend of Tax Revenue Direct vs. Indirect Tax Revenue



2.2.4. Weak tax administration

It goes without saying that efficient and transparent tax administration is essential for a nation. After all, both the tax system and administration play the same important role in a national economy. It is generally true, however, that most developing countries lack both. In the past, Korea was one and Cambodia now does not seem to be an exception. Indeed, the Cambodian government reports that non-compliance, tax arrears, and smuggling on the border are severe. There can be many reasons (economic, social, cultural, etc.) for this. Some causes identified are as follows:

First, the cross checking function of the tax system is inadequate. Cash transactions, for example, prevail. As is well-known, this will limit the cross checking function of the VAT severely. Cambodian MEF reports that this is also due to such cultural aspects as low level of trust toward the tax authority (government) by the general public and the inadequate education of taxpayers as follows:

There is almost no effort at taxpayer education or consultation, and many taxpayers are not familiar with the current tax system. There is a "lost culture of taxation." In the 1960's, Cambodia's tax ratio was 13-15 percent of GDP. For the next 30 years, when most other countries were developing increasingly sophisticated tax systems, Cambodia levied almost no taxes and the general population grew up with little appreciation of the role of taxes or with little willingness to pay. Now, with a tax ratio smaller than 10 percent of GDP, there is a long way to go to achieve even the performance of 40 years ago. People have to believe that their taxes are well used; a belief in well-run government helps the development of a modern tax system.

Second, tax administration in Cambodia is weak because there are large informal sectors. On this, MEF observes the following:

Most workers in Cambodia are typically employed in agriculture or in small, informal enterprises: As they are seldom paid a regular, fixed wage, their earnings fluctuate, and many are paid in cash, "off the books." The base for income tax is therefore hard to calculate. Nor do workers in Cambodia typically spend their earnings in large stores that keep accurate records of sales and inventories. As a result, modern means of raising revenue, such as income taxes and consumer taxes, play a diminished role in Cambodia, and the possibility that the government will achieve high tax levels is virtually excluded.

Resolving this problem requires the enhancement of the industrial structure. Thus, it is more involved than just improving tax administration.

Third, a complex tax system and other complexities in administration cause weak tax administration. In Cambodia, it is said that tax law and the administrative procedures are complicated. MEF report shows this as follows:

A modern tax system cannot operate where the rule of law is uncertain. Tax officials need to have certainty of the law to enforce the tax code at the border and within the country. Taxpayers need to be certain of the law. This implies that bureaucratic interference should be minimized, and that the laws and regulations governing taxes should be transparent and freely available to the public. While the Customs and Excise Department has the main responsibility over custom controls, other government agencies, notably the Ministry of Commerce and the Ministry of Interior, engage in customs controls. This duplicative control raises concerns about transparency and efficiency in customs procedures.

Fourth, the levels of penalty for tax arrears and evasion are said to be low. As is well-known, setting an optimal penalty level is important for good tax administration. This has to be 'normalized' by raising the penalty level to enhance revenue performance.

Finally, basic infrastructures for efficient tax administration, such as education, training, and data base are lacking. The following observations by MEF are worthy of attention:

The current human resources are still weak, and levels of technical customs knowledge and managerial skills need to be improved further. Moreover, salaries of tax officials are so low that they are vulnerable to the temptation of wrongdoing. It is difficult for Cambodia to create an efficient tax administration without a well-educated and well-trained staff, when the salary for officials is low and the informal sector of the economy is big, and the Tax Department has difficulty in generating reliable statistics. This lack of data prevents policy makers from assessing the potential impact of major changes to the tax system.

In sum, regarding all of these problems, we can conclude that comprehensive improvement will be necessary in all areas of administration, such as verification, cross-checking, compilation of appropriate data, research and analytical skills and auditing.

2.3. Reform Measures to Enhance Revenue Performance

Evaluation in the previous subsection shows that more reform is necessary to improve the overall revenue system. Covering all of these reform measures is beyond the scope of the analysis in this chapter. Rather, we will narrow our focus to the measures for enhancing revenue performance in Cambodia, which will ultimately contribute to the reduction of the fiscal deficit.

As stated above, broadening the tax base is most important. Besides, considering the imbalances between tax and non-tax revenue, and domestic and international tax revenue, it is particularly important to broaden the domestic tax base first. In this regard, the Cambodian tax department should spend considerable effort to broaden the income tax base. For this, enhancing the level of the tax administration through better auditing, stricter penalty system, and educating tax officials is necessary. Constructing a database for personal income tax is also very important. Finally, reduction of cash transactions and the informal sector is necessary. Obviously, this last task can only be carried out with the help of other government branches and the general public.

For the corporate income tax, it is important to simplify it by unifying multiple corporate income tax rates. This will reduce both tax administration and compliance costs, which in turn will enhance revenue performance. Besides, it is necessary to streamline tax incentives which have been shown to be abused.

It should be pointed out that reform of the VAT in relationship with the income tax is as important as that of the VAT per se as far as revenue collection is concerned because the evasion of VAT is equivalent to the reduction of the income tax base, which in turn, is a tool for income tax evasion. Therefore, such reforms as the improvement of VAT registration, VAT refund procedures and compliance with VAT should be carried out.

For customs and duties, it is most important to reduce smuggling. Although their share and importance will ultimately be reduced, these taxes on sources from abroad are still very important. To improve customs administration and reduce smuggling, good cooperation among the government agencies is necessary. More use of information technology is also important.

Finally, it should again be stressed that streamlining of tax incentives on all of the taxes is necessary. In this regard, Korea is a good reference. Like many other developing countries (e.g., Taiwan) in the past, Korea used (abused) many tax incentives. Being aware of the negative side effects of such measures, it abolished many of its tax incentives. Besides, building up a DB and more use of IT technology are also needed. Better education and training for tax officials are important as well.

Other than the above measures, the following Supporting Revenue Policy and Administration Measures will be implemented to address all of the above weaknesses according to the report by Cambodian MEF:

1-Adjust and enforce the collection of gambling taxes
2-Expand taxation on unused land
3-Expand and strengthen the collection of excise tax

4-Strengthen forecasting and tax revenue analysis
5-Expand tax collection by banking system for medium taxpayers in provinces- cities.
6-Implement and strengthen accommodation tax.
7-Strengthen self-assessment system in provinces- cities.
8-Prepare data system for support of taxpayer service task, return processing, audit, statistic planning, personnel, training, tax debt, inquiry and cross-checking and transportation.
9-Improve the incentive system for tax officers based on performance.
10-Expand the Real Regime tax to other provinces; so far 17 provinces have been on the Real Tax Regime.
11-Strengthen the enforcement and collection of tax in all cities and provinces by providing proper notice, blocking bank accounts, stopping import-export, etc.
12-Strengthen the cross check of tax payer information with other departments, such as Customs Department, CDC and others.
13-All tax payments are made into the TSA (Treasury Single Account) at the National Bank of Cambodia.
14-Introduction of IT.

As shown, non-tax revenue captures a large share of total revenue. Although its share should decrease in the future, it is important to improve the collection of non-tax revenue. Cambodian MEF suggests the following measures for this:

1. All line ministries must channel the revenue collected under their authorities to the Treasury Single Account.
2. Review and reset the rental rates of the old contracts.
3. Search and collect from new sources of non-tax revenue.
4. Continuously study and search all long term debt in order to prepare the principles and procedures to collect or solve disputes through a court of law.
5. Set mechanism and measures in order to strengthen legal framework and institutions for the management and collection of non-tax revenue.
6. Strengthen the management of state property inventory.
7. Strengthen the management of privatization of state property according to law and legal regulation.
8. Strengthen the effectiveness of collecting revenue from the rent or sale of state property, including the strengthening of rent and contract signing procedures from public enterprises through the strengthening of the enterprise management framework, revenue from the sale of public goods, public service and natural resources.
9. Strengthen the auditing system and revenue collection.

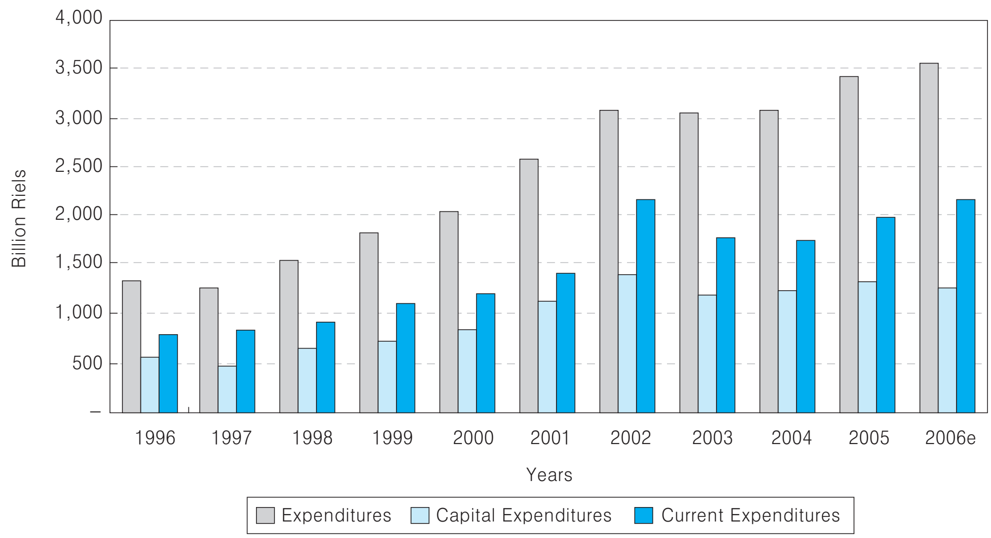
As mentioned, there can be some other issues related with the overall revenue form. That can be discussed in other research.

2.4. Trend of Government Expenditure

To understand and estimate the fiscal balance, the other side of the fiscal system, expenditure, should be reviewed. In this subsection, which is largely an excerpt of the report by Cambodian MEF, trends in government expenditure of Cambodia will be reviewed. As shown, expenditure, as in the case of revenue, increased dramatically in the last ten years.

Under the Organic Budget Law, introduced in December 1993, domestically financed expenditure was contained within budget estimates, and central bank financing was eliminated for the first time since the late 1980s when Cambodia started moving from a centrally planned economy to a market oriented economy. The budget emphasized the importance of increasing revenue as well as the government's intention to continue directing expenditure away from defense and security toward social sectors. Recently, greater focus is being put on supporting poverty reduction efforts and achieving the CMDGs. Government expenditure has increased significantly in the last 10 years from 1319 billion Riel in 1996 to 3897 billion Riel in 2006.

Figure 1-5 ●● Trend of Government Expenditure



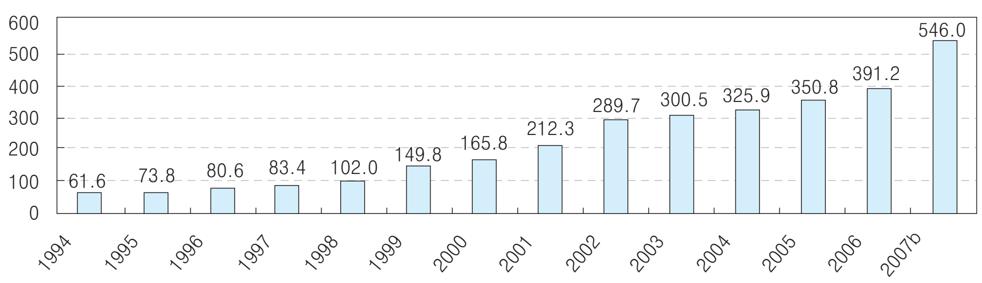
In 2005, total expenditure drastically reduced to 13.3 per cent from a high of 16.3 per cent in 2003 and 14.2 per cent of GDP in 2004. This decline is attributed to both the decrease of current expenditure from 8.2 per cent of GDP in 2004 to 7.7 per cent in 2005 and capital spending from

5.7 per cent of GDP to 5.2 per cent for the same period. The reduction in current expenditure was mainly a result of the following factors: (i) cutback in wage spending for defense and security from 1.4 per cent in 2004 to 1.2 percent of GDP in 2005 and (ii) overall non-wage spending (including operation expenditure) was reduced to 4.9 per cent of GDP in 2005 from 5.4 per cent in 2004.

Total expenditure increased by 15% from 3,388 billion Riel in 2005 to 3,897 billion Riel in 2006. The current expenditure reached 2,373 billion Riel in 2006 or 8% of GDP, while the capital expenditure reached 1,500 billion Riel or 5.1 percent of GDP. Social sector spending is budgeted at about 3.7 per cent of GDP in 2006 with more resources being allocated for rural development. Current expenditure is budgeted to increase by only about 2.1 per cent (from 7.7 per cent in 2005 to 9.8 per cent of GDP in 2006) in order to provide more resources for capital spending. In line with the civil service reform program, civil service salaries are projected to increase but at a gradual pace.

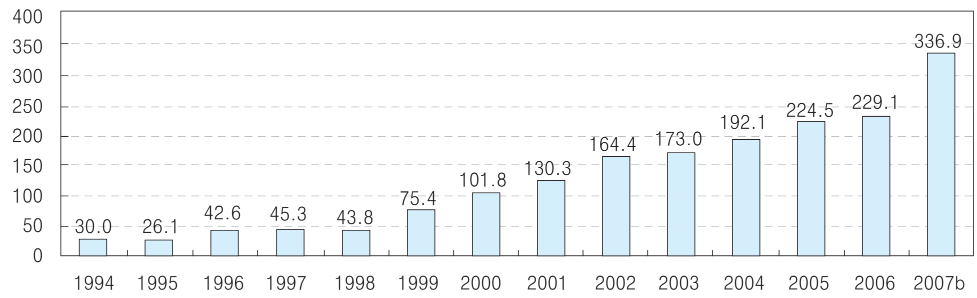
Starting from a low base, the Cambodian education system has made some impressive gains. During the last decade, it has increased education spending by more than fivefold from 102 billion of Riel in 1998 to 546 billion of Riel or US$134 million in 2007. Net enrolment rates at the primary level are up significantly from 65 percent in 2000 to 76 percent in 2004. The lower secondary net enrollment has more than doubled since 1997, increasing from 7.6 percent to 16.4 percent. Advances in important indicators such as literacy, repetition rates and years of schooling for younger age cohorts are further positive signs that the rebuilding of the national education system is taking root. However, the challenge is to improve the quality of higher education.

Figure 1-6 ●● Trend of Expenditure on Education 1994-2007 (in billons of Riels)



Substantial progress has been made in the public health sector. During the last decade, we have increased health spending by more than sevenfold from 44 billion Riel in 1998 to 337 billion Riel or US$83 million in 2007. The mortality rate of children below five decreased from 124 in 2000 to only 83 per thousand births, a 30% reduction. Moreover, the malnutrition of children below five went down from 15% to 7%, more than half. However, the maternal mortality rate remains high, requiring harder work to improve health facilities in general.

Figure 1-7 ●● Trend of Expenditure on Health 1994-2007 (in billions of Riels)



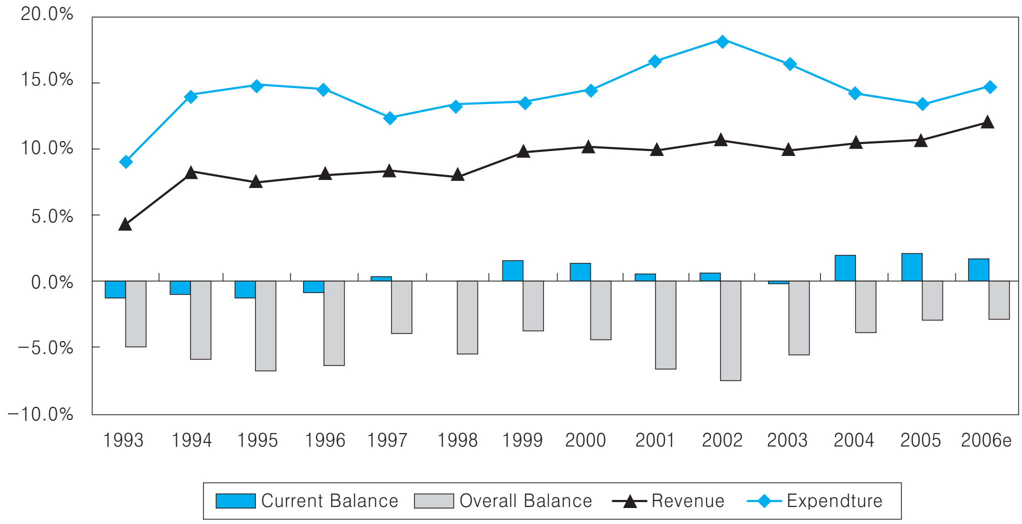
Increase in these two parts—education and health spending, characterizes the expenditure performance of the last 10 or more years since economic reform began. It is a remarkable achievement considering the education level and health status of the people in Cambodia. In this sense, many international organizations have praised efforts made by the Cambodian government. Still, there remains a long way to go. In other words, this increase has not been enough to resolve such issues. This fact will work as a major constraint on the future management of the fiscal balance.

Even though revenue has increased significantly, it is still not enough for the tremendous needs of the government. The government has exercised caution in the current expenditure, resulting in a sizable current expenditure surplus over the last many years. This surplus has been used to finance development projects. Over the last three years, the current account had surplus of up to 402 billion Riel, 507 billion Riel and 494 billion Riel in 2004, 2005 and 2006 respectively.

As there are huge development needs, the overall budget performance has been in deficit for many years. In the recent period, the overall budget deficit has been reduced significantly from

7.4 percent of GDP in 2002 to 2.8 percent in 2005 and 2.1 percent in 2006. The reduction in this deficit is due to prudent fiscal measures implemented by the government and continuous supply of foreign financing.

Figure 1-8 ●● Trend of Fiscal Balance 1993-2006



2.5. Evaluation of Government Expenditure Performance and Suggestions for Future Reforms

As mentioned in the introduction, Lopez-Mejia & Hagemann argued that the public expenditure policy has been supportive of macroeconomic stability recently. They argue that fiscal reform has been the “cornerstone” of Cambodia’s macroeconomic program since the restoration of political and economic stability (IMF, Lopez-Mejia and Hageman, 2006). It is an important achievement since one of the major purposes of fiscal policy is macroeconomic stability.

Public expenditure management, however, leaves much to be desired. For example, bunching of expenditures toward the end of a fiscal year is often found. In fact, to resolve such problems, PAP (Priority Action Program) was introduced in 2000.

In addition, there are many problems on the expenditure side. To resolve such problems, PFMRP (Public Financial Management Reform Program) was recently launched. The longterm objective is to transform public financial management so that it is consistent with best international standards. Lopez-Mejia & Hagemann the summarized major aspects of PFMRP as follows:

- Government ownership: The PFMRP in Cambodia combines the detailed reform strategies of each of the key agencies. Moreover, management of the reform process itself rests with the PFM Reform Committee within the MEF. The committee, chaired by a senior official from the ministry comprises all the relevant agency heads, who in turn have full ownership of reforms at their agencies.

- Donor coordination: Coordination is critical to enhancing capacity building and avoiding duplication and /or conflicting advice to country officials; either of these slippages results in wasted resources and delays in achieving the needed reforms. To ensure better coordination, Cambodia's development partners involved in providing technical assistance in the public financial management area have formed a Development Partners Committee to ensure that providers of technical assistance work in a coordinated and harmonious manner.

- Incentives for civil servants: Against a backdrop of totally inadequate formal wages paid to public employees in Cambodia, most donor-financed projects are accompanied by salary supplements paid to select staff. In the environment of low public wages, insufficient motivation, and moonlighting, this is often the only way to get the job done. However, a number of features of the salary supplementation systems used in Cambodia by development partners are widely seen as counterproductive and need to be addressed: they are not merit-or performance-based, they are subject to abuse and misuse, their levels and modes of disbursement vary widely across government agencies, and they retard progress toward a proper civil service pay reform.

All these ultimately boil down to the enhancement of efficiency and effectiveness in public expenditure so that unnecessary fiscal deficit can be avoided. The current author generally agreed with these proposals. They, however, will not solve the deficit problem in the near future.

Indeed, the most important problem in the public finance of Cambodia must be the chronic budget deficit (see <Figure 8> above). Although it has decreased recently, it is still big. Moreover, it will probably remain so in the future as well.

Problems caused by big deficit are well-known. Inflation, crowding-out effects, increase in burden on future generations and so on are all negative side effects of fiscal deficit. All of these factors will decrease the growth potential of the economy. Besides, if these problems become more serious, interest payments could be another cause of additional deficit if the deficit becomes too big. In other words, a nation may fall into the vicious cycle, using new debt for interest payments. Therefore, it should be emphasized again that the streamlining efforts for expenditure suggested above should be carried out as planned.

One bright prospect for the fiscal balance, however, is that revenue from the sale of oil is expected from 2009. Even with that, fiscal deficit may be inevitable because usage of oil revenue is not fixed yet. This will be further discussed in section V. Somehow, it should be pointed out that it is very important for the Cambodian government to put every effort to reduce fiscal deficit. For that, both an increase in tax revenue and streamlining of public expenditure should be done. In the next section, the Korean experience is explained to see how the Korean government handled such problems.

3. Experience of Korea[3]

This part is introduced to get some lessons from Korea's experience with such important issues as overall revenue performance, fiscal balance, expenditure structure, and tax incentives.

3.1. Tax Revenue

As was pointed out, the major function of taxation is to secure enough funds for expenditures. Korean taxation did not serve this purpose well in the early stage of development as is the case in Cambodia. As can be seen in <Table 5>, the share of total (national and local) tax revenue as a percentage of GNP, or the tax burden ratio, remained below 10% until the mid 60's, although this was an increase from 6~7% in the mid-1950s. The tax burden ratio further increased to 20~21% in the 1990s as a result of great effort by the government to raise revenue. The overall tax burden ratio today, however, is still considered to be low compared to that of other countries.

The increase in tax burden was not easy until the mid-1960s. This was due partly to fluctuations in economic activity and partly to revenue losses from extensive tax incentives and major tax reforms that reduced the personal and corporate income tax rates and increased exemption levels for personal income tax. For example, the fall in the tax burden ratio from 1963-65 was caused by poor performance of the economy in the early 1960s.

This trend, however, became stable after the establishment of the Office of National Tax Administration (ONTA), currently the National Tax Service (NTS), except for the decrease in the tax burden during 1972-1973. That is believed to be the result of the extensive tax reforms and the Emergency Decree on Economic Stabilization and Growth (the so-called "August 3rd Special Measure") in 1972.

Indeed, the establishment of the National Tax Service was a turning point in the history of tax administration in Korea and enabled the revenue increase. One interesting point is that the tax burden ratio increased even in a deep recession. Cooper (1994) argued that this may be due to the target revenue approach adopted by the NTS. In other words, a more stringent effort to collect tax revenue will be made if a decrease in the revenue is expected due to a recession.

3 _ This part is heavily drawn from pp 178-180, 186-187 of the author's previous research, "Reform of Public Finance in Uzbekistan : Lessons from Korea"

Table 1-3 ●● Total Tax Revenue As a Percentage of GNP : Korea

(Unit : %)

Year	Percentage	Year	Percentage
1955	6.2	1979	17.4
1956	6.0	1980	17.9
1957	7.5	1981	18.0
1958	8.6	1982	18.2
1959	10.2	1983	18.5
1960	10.3	1984	17.7
1961	9.7	1985	17.3
1962	10.6	1986	17.0
1963	8.6	1987	17.5
1964	7.1	1988	17.9
1965	8.6	1989	18.5
1966	10.7	1990	19.7
1967	12.0	1991	19.3
1968	13.9	1992	18.7
1969	14.6	1993	18.9
1970	14.3	1994	19.9
1971	14.4	1995	20.7
1972	12.5	1996	21.3
1973	12.1	1997	21.3
1974	13.4	1998	22.9
1975	15.3	1999	19.5
1976	16.6	2000	18.7
1977	16.6	2001	20.7
1978	17.1		

Source: National Bureau of Statistics, *Major Statistics of the Korean Economy*, 1998.
The Bank of Korea, *Economic Statistics Yearbook*, 2002

In sum, we can draw some implications from Korean experiences. First of all, it is not easy to raise enough tax revenue in the early stage of development. The government should expend great effort to increase it, however hard it may be, because it is essential for growth.

3.2. Fiscal Balance

Along with size, fiscal balance is an important characteristic of the budget of a country. It is particularly important because it can be a barometer of macroeconomic policy. Generally, deficit is more expansionary than the balanced increase of expenditure.

The Korean government has maintained a strong fiscal discipline for more than four decades. All line ministries are expected to spend within the limits set by the National Assembly through the appropriation process. All government borrowings should receive prior authorization from the National Assembly. This stern and rigid stance on budget deficit results in a very sound fiscal balance as long as the general account of the central government is concerned (see < Table 4>).

Table 1-4 ●● Fiscal Balance : Korea

(Unit : 100 Million Won)

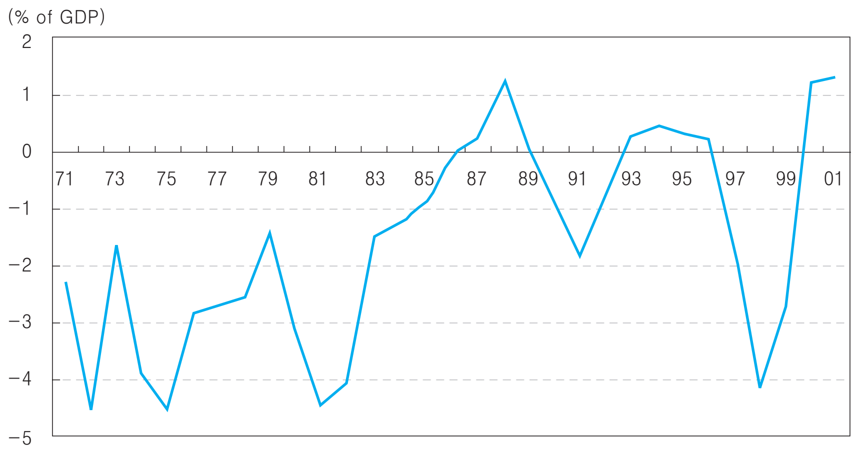
Year	General Account		Consolidated Budget		GDP2)
	Amount	% of GDP	Amount	% of GDP	
1972	239	0.6%	-1,925	-4.6%	42,119
1975	882	0.9%	-4,661	-4.5%	102,955
1980	3,192	0.8%	-11,737	-3.1%	381,484
1981	2,342	0.5%	-21,109	-4.4%	476,567
1982	-582	-0.1%	-22,221	-4.1%	547,210
1983	2,486	0.4%	-9,506	-1.5%	641,965
1984	1,890	0.3%	-9,229	-1.3%	736,051
1985	-472	-0.1%	-7,133	-0.9%	820,621
1986	2,605	0.3%	-649	-0.1%	957,364
1987	11,132	1.0%	2,597	0.2%	1,121,303
1988	20,180	1.5%	16,427	1.2%	1,331,342
1989	4,314	0.3%	-191	0.0%	1,491,647
1990	2,126	0.1%	-15,782	-0.9%	1,787,968
1991	-17,354	-0.8%	-40,220	-1.9%	2,165,109
1992	1,452	0.1%	-17,029	-0.7%	2,456,996
1993	4,341	0.2%	8,129	0.3%	2,774,965
1994	17,218	0.5%	13,843	0.4%	3,234,071

1995	11,119	0.3%	12,415	0.3%	3,773,498
1996	3,618	0.1%	10,990	0.3%	4,184,790
1997	-3,950	-0.1%	69,590[1)]	-1.5%	4,532,764
1998	-8,366	-0.2%	-187,570	-4.2%	4,495,088
1999	3,771	0.1%	-130,650	-2.7%	4,827,442
2000	5,138	0.1%	65,270	1.3%	5,219,592

Note: 1) In 1997, includes the figures of foreign borrowing of 5 billion dollars from IBRD and ADB.
2) At current prices.
Source: National Statistical Office, Korean Statistical Information System, http://www.nso.go.kr
The Bank of Korea, Economic Statistics Yearbook

It is a little bit different if a consolidated central government budget is considered. In the 1970s and into the early 1980s, there was a persistent budget deficit of the consolidated central government. On average, it reached 3 percent of GDP during this period (see Figure 1). Major factors behind such deficit are as follows; high level of transfers to the agricultural sector, heavy investment in social infrastructure, and various subsidies to promote heavy and chemical industries.

Figure 1-9 ●● Budget Surplus/Deficit of the Consolidated Central Government



Source: Koh (2005)

One important principle in fiscal management was established in the early 1980s. It was the principle of "Expenditure within Revenue," or the balanced budget principle. While not formalized in a law or regulation, it acted as self-discipline imposed on the budget authorities against imprudent management of the budget. This principle kept the public debt to a minimal level and indeed became grounds for the fiscal soundness in following years until the economic crisis hit the country.

With the economic crisis in 1997, changes were made abruptly as huge expenditure needs occurred. They were: fiscal support for financial institutions, public assistance to the poor (it almost doubled after the crisis), and unemployment insurance payments (the unemployment rate, which had been below 3 percent up until 1997, rose to 7 percent in 1998).

As a result, the consolidated budget, which remained more or less in balance before the crisis, dipped into a deficit in 1998 of over 4 percent of GDP. The ratio of government debt to GDP rose from less than 10 percent in 1996 to 16 percent in 1998.

Beginning in 1999, the Korean government made consistent efforts to contain expenditure growth. Thanks to the dramatic economic rebound and the rapid growth in revenues, the budget balance recorded a surplus of 1.3 percent of GDP in 2000 and also in 2001, 2002. It seems that the soundness of fiscal balance is back.

While this strict fiscal discipline has enabled the Korean government to keep the size of the government debt at a manageable level and provided it with room to maneuver when the crisis hit the economy, it is considered to have several deficiencies as well (see Koh (2005)). It is not our purpose to discuss such deficiencies. Rather, it should be emphasized here that Korean experience shows how important it is to maintain fiscal balance.

3.3. Structural Characteristics of the Public Expenditures

The structure of the budget also characterizes a country's budget. In Korea, the allocation of limited public resources has been severely distorted by extraordinary defense requirements. The defense budget had occupied about 25 to 30% of the central government's budget since late 1950s. Since 1990, however, it has been gradually reduced to 16%. With the rest — about 15% or less of GNP — the government has had to meet its budgetary needs for general administration, education, economic services, and social development. Rather consistently, about 15% of the general government budget has been allocated to general administration.

During the 1960's, the most serious obstacle to the country's development was shortage of social overhead capital. Accordingly, various public investment projects were implemented during this period.

In the 1970s, under the so-called heavy and chemical industry drive strategy, the government lavishly supported these selected industries, steel, shipbuilding, machinery and electronics for example. "Economic development" thus took priority in spending limited public resources. In addition to these direct expenditures, many tax incentives were used. More detailed analysis on this aspect will be given in the next chapter.

A fundamental change in economic policy stance took place in the early 1980s. As a reaction against the high-growth policies of the 1970s, new policy objectives in the 1980s placed high priority on equity, balance, and stability. However, only minor structural changes can be observed in the government's pattern of expenditure during this decade. One important reason for this was the tight budgetary policy that prevailed in 1982-86. Because of this policy, room for increases in social development was even more limited. From 1987, however, an increasing trend became visible.

In the 1989 budget, however (which was the first budget of the 6th republic), we can see a significant change in the functional spending structure. The share for defense was sizably reduced whereas that for social development was increased by as much as 5.5 percent. This dramatic increase in social development expenditure specifically went to housing projects and community development projects. Expenditure shares for health and social security and welfare were almost unchanged between 1988 and 1989. The trend in budget structure change is summarized in <Table 5>.

Table 1-5 ●● Structure of Expenditures (Korea)

Year	General	Defense	Social[a]	Education	Economic	Others[b]	Total
1975	16.6	22.9	12.4	13.6	32.4	2.1	100
1980	12.9	25.4	13.8	14.8	28.8	4.3	100
1985	14.6	21.6	15.3	16.3	25.6	5.2	100

Notes: a) Social services include health, social security and welfare, housing and community development, and other community and social services.
b) Others include interest payments and emergency relief expenditures.

This table confirms the abovementioned characteristic of the expenditure structure during the development period in Korea: emphasis on economic development and the suppression of welfare or social expenditure. This is in contrast to the expenditure structure of Cambodia, which shows a greater share of the latter than Korea. It cannot be argued that the Korean case is always the best example, particularly so in this case. As mentioned, an increase in social expenditure in Cambodia is an achievement rather than a weak point. In the future, however, most of the increase in economic development expenditure is needed for infrastructure in Cambodia.

3.4. Tax Incentives

In the early phase of Korea's development, tax incentives played a relatively limited role in influencing business investment behavior, largely because of the prevailing market imperfections. It was only after 1966, the year in which the National Tax Administration was established, that tax incentives began to play a certain role in Korean economic development.

In the 1970s, more diversified and sophisticated tax incentives were provided during the course of the so-called heavy industrialization phase of the Korean economy, while incentives for export promotion were actually reduced in the early 1970s. Such tax incentives as tax holidays, investment tax credits, tax free reserves, and accelerated depreciation were actively used during this period[4]. During that decade, even though direct allocation continued to play a major role, in line with the increasing reliance of the government on market forces in the allocation of resources, tax incentive policies began to receive increasing emphasis. Particularly in 1974, there was a major tax reform and all major incentives were unified and rearranged under the title, 'Special Tax Treatment for Key Industries' in the Tax Exemption and Reduction Control Law (TERCL).

In the 1980s, tax incentives began to be used less than before under the perception that they were being abused. First, some industries were deleted from the beneficiary list. The 60% special depreciation system was completely abolished. The tax holiday option was abolished and the investment tax credit option was confined only to the machinery and electronics industries. At the same time, the investment tax credit rate was reduced to 6% (10% for investments using domestic capital goods) from 8% (10%). Effective from 1983, it was again halved to 3% (5% for investments using domestic capital goods) reflecting the downward adjustment of the statutory corporate tax rate.

What are the impacts of such tax incentives? Have they really contributed much to the growth of the economy as intended? The answer is neither affirmative nor negative. Almost all the research on the cost of capital and effective corporate tax rates in Korea pointed out that they have been somewhat effective, but not to a great extent (see Kwack and Yoo (1994), and

4 _ For detailed explanation on various tax incentives, see Kwack and Yoo, *Tax Incentives and Economic Development*, 1994.

Yoo (1998)). As can be seen from <Table 8> and <Table A1>[5], there were some tax reduction effects, although they were not so big. Yoo (1995) showed that investment tax credits and accelerated depreciation were powerful. Other measures, particularly policy loans (credit support), have been argued to be far more effective than tax incentives (see Cho and Kim, 1994).

Table 1-6 ●● Changes in the Effective Marginal Tax Rate (All Assets)

Year	Statutory Tax Rate 1) (A)	Effective Tax rate 2) (B)	Effective Tax Rate Ⅱ) (C)	Tax Reduction Effect (A - B)	A-C	C-B
1960	.330	.300	.319	.030	.011	.019
1961	.242	.215	.237	.027	.005	.022
1962	.220	.189	.216	.031	.004	.027
1963	.275	.227	.269	.048	.006	.042
1964	.330	.281	.324	.049	.006	.043
1965	.330	.284	.324	.046	.006	.040
1966	.385	.328	.377	.057	.008	.049
1967	.385	.319	.372	.066	.013	.053
1968	.495	.436	.453	.059	.042	.017
1969	.495	.434	.449	.061	.046	.015
1970	.495	.438	.454	.057	.041	.016
1971	.450	.395	.414	.055	.036	.019
1972	.400	.311	.375	.089	.025	.064
1973	.430	.369	.437	.061	-.007	.068
1974	.430	.342	.435	-.002	-.005	.003
1975	.530	.451	.543	.079	-.013	.092
1976	.530	.428	.531	.102	-.001	.103
1977	.530	.380	.517	.150	.013	.137
1978	.530	.36	.503	.164	.027	.137
1979	.530	.359	.504	.171	.026	.145
1980	.530	.383	.508	.147	.022	.125

5 _ This table summarizes the effective marginal tax rates according to asset types

1981	.530	.405	.530	.125	.000	.125
1982	.504	.454	.502	.050	.002	.048
1983	.437	.394	.439	.043	-.002	.045
1984	.437	.378	.393	.059	.044	.015
1985	.437	.395	.397	.042	.040	.002
1986	.437	.386	.392	.051	.045	.006
1987	.437	.397	.398	.040	.039	.001
1988	.437	.397	.403	.041	.034	.007
1989	.437	.395	.404	.042	.033	.009
1990	.437	.402	.407	.035	.031	.004

Notes: 1) Corporate tax rate × (1+inhabitant tax + defense tax rate).
2) Effective tax rate considering all of the tax incentives.
3) Effective tax rate considering depreciation allowance only.
Source: Kwack and Yoo, Tax Incentives and Economic Development, 1994.

4. Fiscal Balance Forecast for Cambodia

In this section, the forecast of fiscal balance will be done. For this, revenue is forecasted first, and then the expenditure forecast is carried out next, followed by the fiscal balance forecast. A major limitation in this analysis is the lack of data. Besides, little information on tax reforms is available. Because of these factors, it is hard to carry out a good empirical analysis, particularly on individual taxes.

With these limitations, regression analyses are conducted. Following conventions in this kind of analysis, major taxes (profit tax, VAT, sum of direct taxes, sum of indirect taxes) are regressed on the GDP. This is based on the assumption that GDP is the only important explanatory variable affecting the change in each type of tax revenue. Although this is rather a theoretically weak rationale, it is practically meaningful.

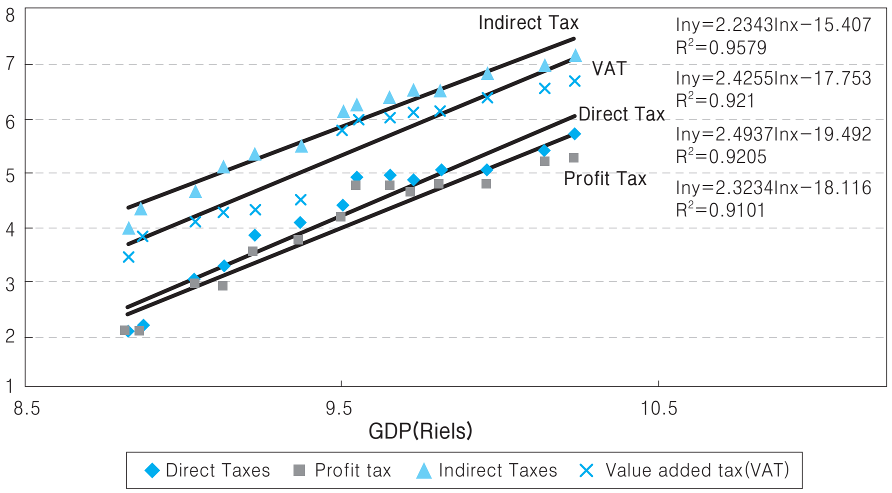
For this purpose, tax revenue data is regrouped for major tax categories. Results are shown in the table below.

Table 1-7 ●● Trend of Tax Revenues (Billion Riels)

	Direct Taxes	Profit Tax	Indirect Taxes	VAT
1993	8.0	8.0	51.6	32.0
1994	8.6	7.7	75.1	46.9
1995	20.9	18.6	103.8	60.1
1996	26.5	18.5	163.7	70.4
1997	46.1	35.0	204.0	75.2
1998	59.0	42.1	244.1	90.1
1999	82.7	65.4	446.6	330.1
2000	135.6	115.1	514.2	385.7
2001	140.5	112.8	580.5	412.0
2002	131.8	102.8	671.7	449.4
2003	158.4	117.9	674.5	449.4
2004	157.9	117.3	906.2	590.6
2005	222.4	172.0	1116.1	719.1
2006e	303.0	190.0	1290.0	810.0

Regression results based on the above data are given in <Table 4>, <Figure 7>. We took logs on all dependent variables and the independent variable so that coefficients represent elasticity (buoyancy). As can be seen, fit is not so good even if R is fairly high. This is due to the fact that the result of the tax reform is not properly reflected in the regression.

Figure 1-10 ●● Regression results: Selected Taxes



As shown in this figure, there are jumps in revenues of VAT and sum of indirect taxes in 1999 and for profit tax and sum of direct taxes in 2000. Thus, we introduced dummy variables to resolve these problems(see <Table 8>). Somehow, elasticities bigger than 2 are hard to accept.

Table 1-8 ●● Regression results: Selected Taxes

	Direct Taxes	Profit Tax	Indirect Taxes	VAT
Intercept	-18.11	-15.18	-11.76	-7.93
t value	- 4.86 (p=0.00)	- 4.23(p=0.00)	- 5.68 (p=0.00)	- 6.93 (p=0.00)
Slope	2.34	2.00	1.82	1.32
t value	5.74 (p=0.00)	5.08 (p=0.00)	8.00 (p=0.00)	10.51 (p=0.00)
D1 (98/99)	—	—	0.42	1.13
t value	—		2.11 (p=0.06)	10.27 (p=0.00)
D2 (99/00)	0.16	0.34	—	—
t value	0.45 (p=0.66)	0.98 (p=0.35)	—	—
R^2	0.922	0.917	0.970	0.993
Adjusted R^2	0.908	0.902	0.965	0.991

Based on these results and the projection of GDP by the Cambodian government, we forecasted the direct and indirect tax revenues as a reference to be compared with the projections by the Cambodian government. Our projection is shown in <Table 10>, while that of the Cambodian government is shown in <Table 9>. These tables show big differences in the two forecasts. This is as expected, due to the limitations mentioned above.

Table 1-9 ●● Projection of selected tax revenue: Cambodian MEF (Billion Riels)

	Direct Taxes	Indirect Taxes
2007p	367.0	1464.0
2008p	545.2	1610.4
2009p	674.3	1771.4
2010p	782.4	1948.6
2011p	904.8	2143.4

Table 1-10 ●● Projection of selected tax revenue (Billion Riels)

	Direct Taxes	Indirect Taxes
2007p	497.4	1821.1
2008p	610.1	2135.3
2009p	747.5	2501.5
2010p	917.0	2933.7
2011p	1125.2	3441.1

Because of such unsatisfactory results, we tried different regressions. Log of the current and total revenue is regressed on log of GDP, now. This approach is based more on practicality than theoretical robustness. Results for current revenue are as shown in <Figure 11> and <Table 11>. Pay attention to the revenue elasticity of GDP. It is around 1.4, which still seems to be big. Although this result is better than the previous ones, it is still unsatisfactory. It is again due to the abovementioned limitations.

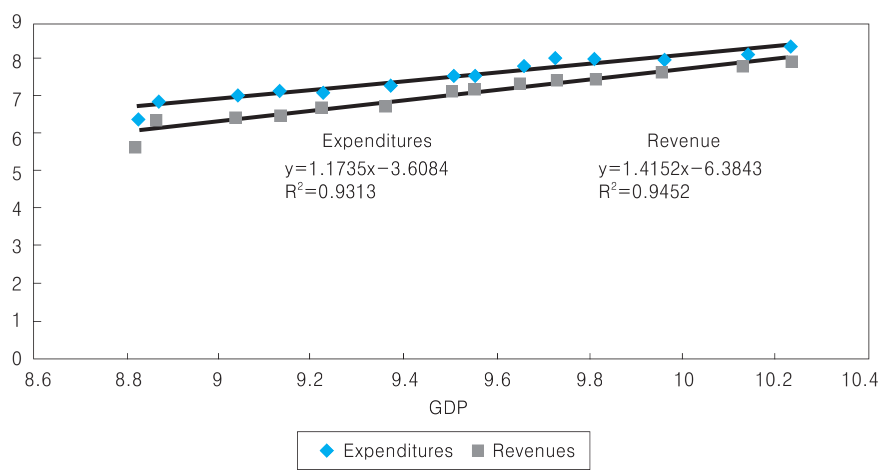
Next, to forecast the fiscal balance, expenditure should be projected. We carried out regression on the expenditure on GDP. Data for this regression is given in the following table.

Table 1-11 ●● Trends of expenditure and total revenue (Billion Riels)

	Expenditure	% GDP	Current Revenue	% GDP
1993	608.4	9.0%	290.1	4.3%
1994	997.7	14.1%	589.1	8.3%
1995	1247.9	14.8%	635.3	7.5%
1996	1319.7	14.4%	709.9	7.7%
1997	1263.3	12.5%	834.2	8.2%
1998	1557.1	13.3%	905.3	7.7%
1999	1823.7	13.6%	1316.1	9.8%
2000	2039.7	14.5%	1393.6	9.9%
2001	2586.6	16.6%	1554.7	10.0%
2002	3042.9	18.1%	1769.9	10.6%
2003	2994.5	16.4%	1790.0	9.8%
2004	3022.3	14.3%	2200.5	10.4%
2005	3389.3	13.4%	2567.6	10.1%
2006e	4116.0	14.8%	2996.0	10.7%

It should be pointed out that the regression of total expenditure on GDP may not be as meaningful as the actual plan of the expenditure announced by the government since the latter is a reflection of the will of the government. It, however, could be a good reference point. In the fiscal balance forecast that follows, both of them are used.

Figure 1-11 ●● Regression Results of Expenditure and Current Revenue



As can be seen in the following table, both estimates of elasticity are significant at the 1% level.

Table 1-12 ●● Regression Results of Expenditure and Current Revenue

	Expenditures	Current Revenue
Intercept	-3.61	-6.38
t value	-4.12 (p=0.00)	-6.82 (p=0.00)
Slope	1.17	1.42
T value	12.76 (p=0.00)	14.39 (p=0.00)
R^2	0.931	0.945
Adjusted R^2	0.926	0.940

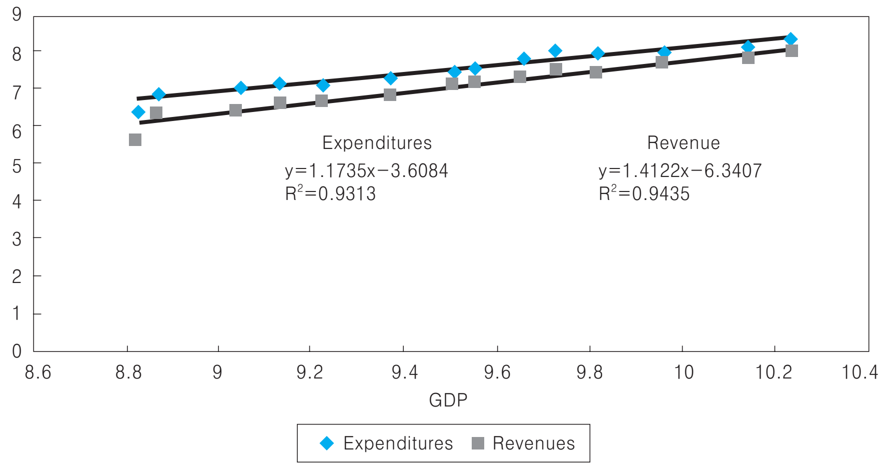
The reason why we use current revenue as a dependent variable is that there was a big jump in capital revenue in 2006 due to the sale of public enterprises. This is problematic. In the next regression, we resolve this problem by simply assuming that the capital revenue in 2006 is 30billion riel to keep up with the trend. Results of the regression are given in <Table 11>. As can be seen in the table, the elasticity is 1.41, which is still high.

Table 1-13 ●● Regression Results of Total Revenue

	Total Revenue
Intercept	-6.34
t value	-6.67 (p=0.00)
Slope	1.41
t value	14.15 (p=0.00)
R^2	0.943
Adjusted R^2	0.939

Estimates are significant at the 1% level again.

Figure 1-12 ●● Regression results of expenditure and total revenue



So far, we have estimated "point elasticity" to forecast revenue, and results are unsatisfactory. Thus, we also estimated "arc elasticity". As can be seen in the next table, these estimates vary widely as well. To resolve this problem, we took the arithmetic mean of the last five years, taking this as an estimate of revenue elasticity. This approach is often used by practitioners although the theoretical basis is very weak. The estimate of the elasticity is 1.19.

Table 1-14 ●● Arc Elasticity

	GDP	%△	Total Rev.	%△		
2001	15578.7		1563.7			
2002	16768.2	7.6%	1786.1	14.2%	ε1 =1.86	
2003	18250.1	8.8%	1821.4	2.0%	ε2 =0.22	
2004	21140.6	15.8%	2220.0	21.9%	ε3 =1.38	ε =1.19
2005	25350.1	19.9%	2597.6	17.0%	ε4 =0.85	
2006e	27891.3	10.0%	3026.0	16.5%	ε5 =1.65	

Based on that elasticity, forecast results are as follows. They are naturally less than previous ones.

Table 1-15 ●● Total revenue Forecast Based on Arc Elasticity

	GDP	%△	%△	Total Rev.
2006e	27891.3			3026.0
2007p	30505.2	9.4%	11.2%	3364.5
2008p	33286.5	9.1%	10.9%	3730.6
2009p	36303.1	9.1%	10.8%	4134.1
2010p	39616.1	9.1%	10.9%	4584.3
2011p	43235.5	9.1%	10.9%	5084.2

Based on forecast of revenue and expenditure, the fiscal balance can be forecasted. In using this result, it should be remembered that the revenue from the sales of oil will become an important part of the government revenue. As we have two different revenue forecasts, there can be two scenarios: One with the revenue forecast based on point elasticity, the other on the average of arc elasticity in recent years. Since the former gives the greater revenue forecast than the latter, we call it the "optimistic" forecast, while the other is called the "realistic" scenario.

Also, for each scenario, there can be two forecasts for expenditure: One is a forecast of the expenditure based on the regression and the other is the announced plan by the Cambodian government (see <Table 16>). Thus, there are four possible combinations: Scenario 1-1 is a combination of revenue forecast based on point elasticity and the expenditure forecast by the regression while scenario 1-2 is the case of the former combined with the revenue forecast by the Cambodian government. Scenario 2-1 is a combination of the revenue forecast based on the arc elasticity and our revenue forecast while scenario 2-2 is that of arc elasticity forecast combined with the Cambodian forecast. These results are shown in <Tables 17-20> and <Figures 13-16>. They will be explained in turn.

Table 1-16 ●● Projection by Cambodian MEF (Billion Riel)

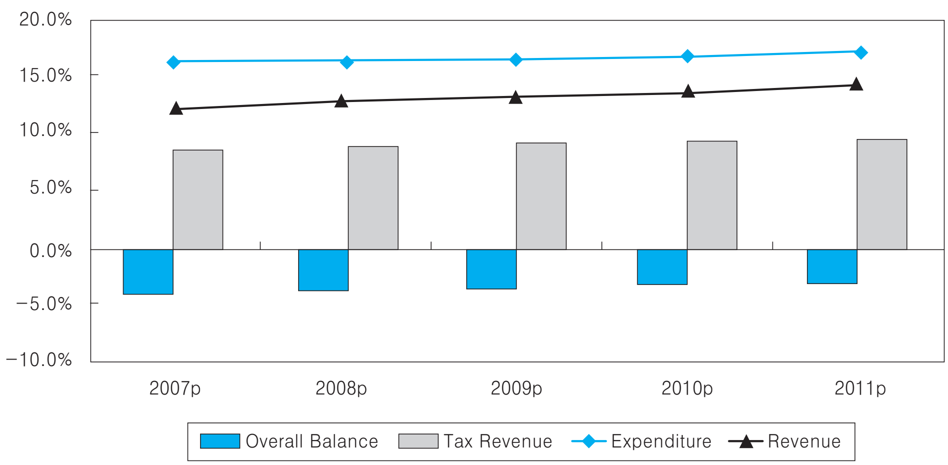
	Expenditures	Current Revenue
2007p	5077.0	3494.0
2008p	5204.1	4095.4
2009p	5666.8	4634.2
2010p	6132.9	5164.3
2011p	6711.9	5753.5

We will start with the first scenario, i.e., the combination of the revenue forecast based on point elasticity and the expenditure forecast by the regression.

Table 1-17 ●● Fiscal Balance Forecast (Scenario 1-1)

	Total Revenue	% GDP	Expenditures	% GDP	Balance	% GDP
2007p	3,795.8	12.4%	4,958.7	16.3%	-1,162.9	-3.8%
2008p	4,293.6	12.9%	5,493.3	16.5%	-1,199.8	-3.6%
2009p	4,853.2	13.4%	6,082.0	16.8%	-1,228.9	-3.4%
2010p	5,490.2	13.9%	6,738.4	17.0%	-1,248.2	-3.2%
2011p	6,211.7	14.4%	7,466.4	17.3%	-1,254.7	-2.9%

Figure 1-13 ●● Fiscal Balance Forecast (Scenario 1-1)



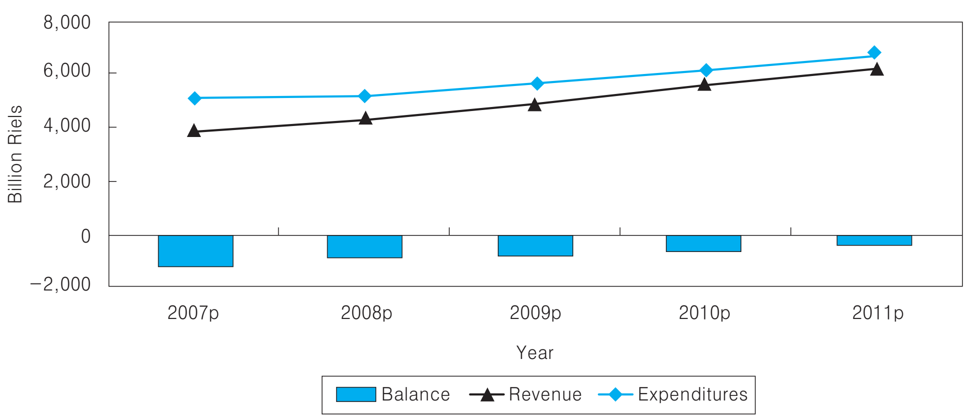
This scenario, as explained, is rather an optimistic one. Still, substantial deficit is expected, reaching around 3% in 2011. It is expected that oil revenue will be between 50-100 billion riel from 2009. Thus, that will not affect the size of the deficit much.

The next scenario is the most optimistic scenario since it combines the revenue forecast based on the large elasticity of revenue with the expenditure forecast based on our regression, which gives a lager figure than the Cambodian government. Even in this case, substantial deficit is expected, although the gap narrows.

Table 1-18 ●● Fiscal Balance Forecast (Scenario 1-2)

	Total Revenue	% GDP	Expenditures	% GDP	Balance	% GDP
2007p	3,795.8	12.4%	5077.0	16.6%	-1,281.2	-4.2%
2008p	4,293.6	12.9%	5204.1	15.6%	-910.6	-2.7%
2009p	4,853.2	13.4%	5666.8	15.6%	-813.6	-2.2%
2010p	5,490.2	13.9%	6132.9	15.5%	-642.7	-1.6%
2011p	6,211.7	14.4%	6711.9	15.5%	-500.2	-1.2%

Figure 1-14 ●● Fiscal Balance Forecast (Scenario 1-2)

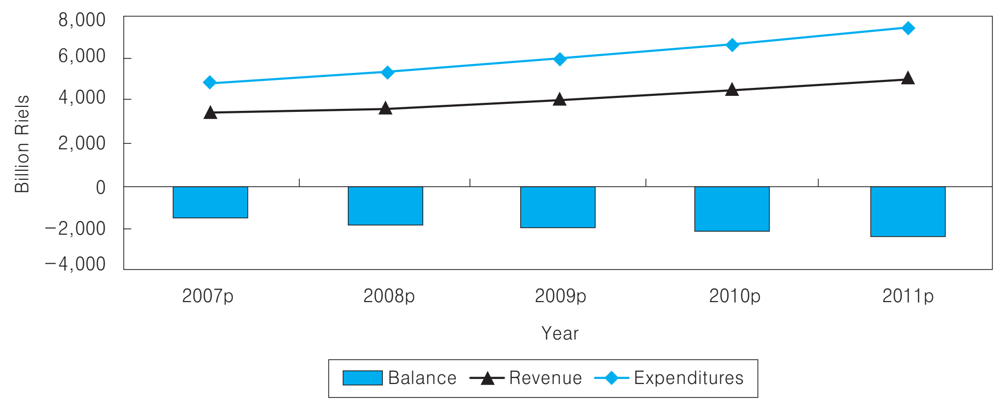


Now, we move to more realistic scenarios which are based on arc elasticities of revenue, the sizes of which are smaller than that of the previous regression, coupled with the expenditure forecast based on our regression.

Table 1-19 ●● Fiscal Balance Forecast (Scenario 2-1)

	Total Revenue	% GDP	Expenditures	% GDP	Balance	% GDP
2007p	3,364.5	11.0%	4,958.7	16.3%	-1,594.2	-5.2%
2008p	3,730.6	11.2%	5,493.3	16.5%	-1,762.8	-5.3%
2009p	4,134.1	11.4%	6,082.0	16.8%	-1,948.0	-5.4%
2010p	4,584.3	11.6%	6,738.4	17.0%	-2,154.1	-5.4%
2011p	5,084.2	11.8%	7,466.4	17.3%	-2,382.3	-5.5%

Figure 1-15 ●● Fiscal Balance Forecast (Scenario 2-1)

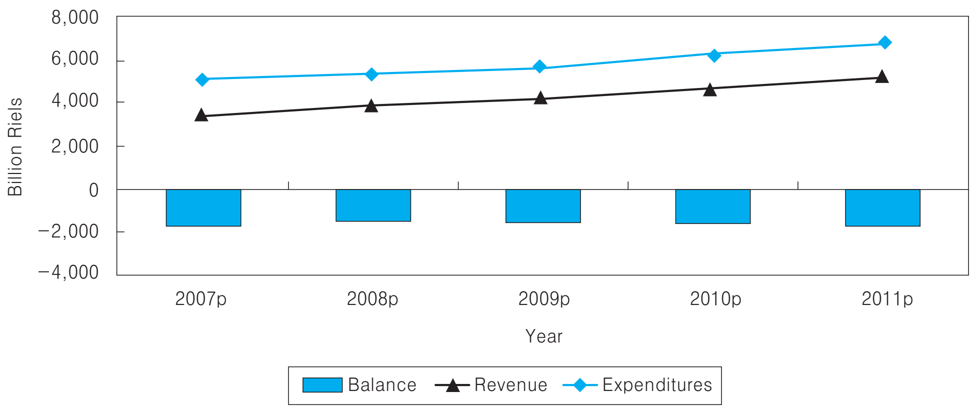


The following scenario must be the most realistic one since it is a combination of the revenue forecast based on smaller revenue elasticity (arc) and the expenditure forecast by the Cambodian government. In this case, in 2011, the deficit will be around 4% of GDP.

Table 1-20 ●● Fiscal Balance Forecast (Scenario 2-2)

	Total Revenue	% GDP	Expenditures	% GDP	Balance	% GDP
2007p	3,364.5	11.0%	5077.0	16.6%	-1,712.5	-5.6%
2008p	3,730.6	11.2%	5204.1	15.6%	-1,473.6	-4.4%
2009p	4,134.1	11.4%	5666.8	15.6%	-1,532.7	-4.2%
2010p	4,584.3	11.6%	6132.9	15.5%	-1,548.6	-3.9%
2011p	5,084.2	11.8%	6711.9	15.5%	-1,627.7	-3.8%

Figure 1-16 ●● Fiscal Balance Forecast (Scenario 2-2)



In sum, budget deficit is inevitable even if there is substantial revenue inflow to the fiscal sector from sales of oil, the size and use of which is not fixed yet. Besides, it should be born in mind that the interest payments accruing from debt (presumably from bond issues) were not included here.

As a matter of fact, a huge inflow of the oil revenue will pose serious policy issues as well. Should it be used only to reduce the fiscal deficit? Should it be used to repay the existing debt first? If there is an inflow of the oil revenue into the public sector, isn't it likely that new demands on such expenditures as SOC, human resource development, and so on, will arise? This last case is highly probable considering the fact that there is much need for public expenditure in nearly every part of the economy in a developing country like Cambodia.

Therefore, it is important to contain all of these requests within a reasonable limit even if there is a revenue increase due to sales of the oil. The Cambodian government is well aware of these problems. In the next section, basic principles on the use of the oil revenue set out by Cambodian government are introduced.

Setting aside the oil revenue issue, we are back to the central question. How can the Cambodian government resolve the deficit problem? There can be some measures such as borrowing from the central bank, borrowing from international agencies, etc. More than anything else, an increase in tax burden ratio is desirable as shown. There is a certain limit, however, on increasing the tax burden ratio substantially in the near future. It will not be easy to increase borrowings from international organizations either. Considering all these factors, issuance of bonds must be the most realistic measure to cover the deficit. It is not easy, however, as can be seen in the next section.

5. A Few Remarks on Bond Issuance

It should be pointed out here again that it is important to reduce deficit before considering government bond issuance. In other words, only after putting much effort into reducing (or eliminating) deficit, should the government rely on issuing bonds. As a matter of fact, the Cambodian government is trying hard to curb the fiscal deficit. PFMRP is one such example. But, effort will not totally eliminate the budget deficit in the future, as explained in the previous section.

As was mentioned, oil revenue adds a new dimension to this discussion of the fiscal deficit. Even under a very rough and pessimistic scenario, revenue from the sales of oil (expected from 2010) captures around 10 %of GDP. If it is used to cover the expected deficit, it will be more than enough to do so. But then, is it really desirable to use it in this way? Presumably, zero deficit while using the oil money is good. However, it may result in an inadequate tax effort (remember that the tax burden ratio is only around 10%). Besides, it may accelerate the pace of the increase in expenditure since it has not been sufficient, as shown in the previous sections. How the existing debt can be repaid is another important policy issue under this new situation.

All these concerns lead us to the following fundamental question: How should the oil money be used? As was properly pointed out by Cambodian MEF, it can be a blessing or a curse to the economy. We do not attempt here to give advice on this issue since it is beyond our scope. Instead, the official position by Cambodian MEF will be introduced as follows.

<Future Oil Revenue Management>[6]

The recent confirmed discovery of oil and gas in Cambodia will provide another source of revenue for the Royal Government. There has been no exact estimate of oil revenue. Oil and gas will be a new revenue stream that is an opportunity for developing the Cambodian economy, providing it is effectively managed, by allocating needed resources for investment to help Cambodia implement its NSDP and reach CMDGs. However, if managed ineffectively, it is likely to bring on negative destabilizing experiences in terms of macroeconomic imbalance, and foster corruption. All this calls for needed policy and institutional safeguards to be established to ensure prudent planning and management of potential petroleum revenue.

Arrangement to put in place necessary policy and institutional framework, including careful consideration of the independent management structure, should commence well in advance of

6 _ This part is an excerpt from the report by Cambodian MEF

the coming revenue flow from petroleum production. Moreover, consultations are required at different levels among concerned agencies due to considerable legislative process and procedures to be covered and overcome before setting up a proper petroleum revenue management system. From experience, a revenue management arrangement in the form of an independent, transparent and accountable petroleum fund shall be considered.

With this connection, the government is well aware of the following necessary measures to ensure prudent management of oil and gas revenues, which include:

i- Develop policy and strengthen institutional arrangements for transparent oil and gas revenue management, including improving Ministry of Economy and Finance (MEF) operational aspect related to the sequestration and smoothing out of revenue flows to the budget within the context of fiscal and macroeconomic management.

ii- The oil revenue policy and management shall adhere to the Extractive Industries Transparency Initiative (EITI) principles and engagement. Early engagement in EITI is believed to be a key component of the strategy to ensure future oil revenues are earned, invested, and spent appropriately; and

iii- Strengthen technical capacity on oil fund and taxation policy, negotiations with oil companies (including from a legal perspective), and revenue management, as well as technical aspects of oil and gas extraction.

Moreover, to address operational issues in formulating and assessing fiscal policy when the government gets oil revenue, the government should put forward operational guidelines based on lessons drawn from the experience of many oil producers. First, the non-oil fiscal balance should be given greater attention as an indicator of fiscal policy, and will figure prominently in the budget and in fiscal analysis. Second, the non-oil balance, expenditure in particular, should be adjusted gradually, which requires decoupling, to the extent possible, government spending from oil revenue volatility. Third, the government should strive to accumulate substantial financial assets over the period of oil production on both sustainability and intergenerational equity grounds. Fourth, in setting fiscal policy, the Royal Government will give support to broader macroeconomic objectives. Finally, the government should pursue strategies aimed at breaking pro-cyclical fiscal responses to volatile oil prices and ensuring that the government's financial position is strong enough to weather downturns in oil prices.

In managing oil and gas revenue, there is no clear institutional role or responsibility under the current arrangement in Cambodia. According to the mandate, the Cambodia National Petroleum Authority (CNPA) is responsible for the strategy and policy guidelines for the exploration and production of petroleum resources, including regulating the petroleum industry in Cambodia. However, there is no clear institutional responsibility for administering oil and gas revenue flows. Thus, the government should consider the following effective collection/inflow and management of natural resource proceeds:

(a) Adopt a practical institutional structure and arrangement to manage potential revenue flow form oil and gas.

(b) A clear legal framework for the taxation applicable to petroleum operations in general and PSAs (Production Sharing Arrangements) in particular. For example, the fiscal provisions in Chevron's production sharing agreement are inconsistent with the Law on Taxation. This has led to protracted negotiations regarding the establishment of a VAT Deposit Account.

(c) There is a need for specific petroleum tax legislation that is applicable to all petroleum operators as the existing Law on Taxation of 1997 overrides and replaces the taxation provision of the earlier Petroleum Regulation of 1991.

The government understands that with revenue collection and management, institutional capacity is essential for effective revenue distribution, and vitally important for Cambodia to ensure that sufficient capacity exists by the time large oil and gas revenue arrive —currently expected by 2010. At all these stages, there are great horizontal fiduciary risks, especially during the production stage where oil revenue receipts are in large amount and leakage or outflow of funds to extra budgetary accounts can occur (as audit function and public oversight of government financial management remains extremely weak) between the point of sale and budget as well as between budget (or National Treasury) and what various central ministries and agencies receive.

All taxes will be managed by the Ministry of Economy and Finance's tax department and will be channeled through the National Treasury and tax revenue resources from oil and gas will be allocated to spending agencies under the general budgetary process consistent with the country policy priority statement (i.e. NSDP and PIP) via the three-year rolling budgetary framework such as MTEF.

Overall, government bond issuance is necessary and inevitable in Cambodia even with the oil revenue. Government bonds are necessary for covering deficit, but also for the development of the bond market which is not developed yet. To do so is not so simple, however, because of the very reason of doing so-developing the bond market. As a matter of fact, only recently has the bond market begun to function properly in Korea. Before that, bonds issued by the government were virtually allotted to financial institutions instead of being traded in the market.

Such (enforced) allotment will be inevitable in Cambodia for a while. For the bond market to function well, intermediaries (dealers and brokers) should be trained and brought up.

It is also inevitable that the discount rates of government bonds will be high. In that case, the fiscal burden or pressure of the fiscal deficit will increase greatly. The possibility of issuing bonds to pay back interest cannot be excluded.

Another problem to be resolved in government bond issuance is dollarization. In Cambodia, it is said that about 90% of financial transactions are done with US dollars. It is not our purpose to discuss the problem of dollarization here. Somehow, the Cambodian government is actively pursuing dedollarization policy recently. In that case, the amount of government bonds issued in riel terms becomes an important issue.

In sum, there are many issues to be resolved for government bond issuance to be carried out effectively and smoothly. In this paper, we do not attempt to provide details of such resolutions. It is simply beyond the scope of the paper. Instead, we want to emphasize the importance of such measures.

6. Conclusion

In this chapter, we have attempted to find policy measures to improve revenue collection and to forecast the fiscal balance in Cambodia from 2007-2011. So as to come up with reform measures, the current fiscal system and past reforms were reviewed briefly. Then, the past experience of Korea with an emphasis on the tax burden ratio and the fiscal balance was explained to draw implications for Cambodia.

In this part, it is shown that much progress has been made in both revenue and expenditure. A modern tax system has been established and the tax administration has progressed. On the expenditure side, improvement such as the increase in health and education spending has been made.

It leaves much to be desired yet. Even with such progress, revenue collection is somewhat retarded. Thus, it is advised here to broaden the tax base, enhance overall tax administration, construct a DB, streamline tax incentives and so on. To put great effort into streamlining expenditure, which in turn will contribute to reducing the deficit, is also recommended.

In forecasting, it was hard to get good regression results due to the shortage of data. With such constraints, we had to consider several different cases and scenarios. Even with those limitations, we conclude here that a fairly big deficit in the coming five years is expected.

To resolve the problems caused by the deficit, it is important for the Cambodian government to put much effort into reducing such deficit, per se. The Korean experience shows the importance of such effort very well.

Even with these efforts, it is shown here that it is inevitable to have a big deficit in the near future if oil revenue is not taken into consideration. As shown, how to use the oil money has not been properly determined yet. It was also pointed out that there is a certain limit on using other measures such as borrowing from international organizations, etc. Under such circumstances, Cambodia cannot but rely on government bonds. The most serious obstacle in doing so is that the bond market is not well developed. Therefore, it is also important for the Cambodian government to put much effort into developing the bond market at the same time. Ironically, government bond issuance is necessary to develop the bond market in Cambodia. In this sense, issuing bonds is both a challenge and an opportunity.

Since we have certain limits on the analysis, further development of forecast methods is needed. That could be a topic for future research.

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Chapter 2

Fiscal Resource Mobilization with Emphasis on Government Bond Issuance

Summary

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MainStream & Company, Ltd

The Cambodian government has been suffering fiscal deficits in recent years and is also expected to be in the red in near future. Cambodia has been mostly dependent on concessional loans or aids from international organizations to make up the fiscal deficits so far, but it needs to establish an independent system to cover the fiscal deficits by itself. The Cambodian gov't is considering gov't bond issuance as a major tool in financing its fiscal deficits.

The purpose of this report is to make policy recommendations on how to cover the expected fiscal deficits by issuing government bonds in the Cambodian market under the current situation.

Fiscal revenue and expenditure forecasting was completed by the fiscal forecast team, another team involved in this project. According to the forecasts, fiscal deficits of around 5% of GDP are expected in coming years.

Generally speaking, there are a few ways to cover gov't fiscal deficits, i.e., increasing tax revenue, borrowing from the central bank and issuing gov't bonds. Financing through gov't bond issuance has no risk of inflation and is contributive to bond market development. The Central bank can use the gov't bond market as a tool of monetary policy operation as well if the gov't bonds are issued in local currency.

In making up the fiscal deficits by issuing gov't bonds, long term deficits should be covered by long term bonds (bonds with maturity of more than 1 year) and short term deficits can be covered by short term bills like treasury bills.

According to the results of fiscal balance forecasting done by the fiscal forecasting team, if we assume that 100% of deficits are covered by gov't bonds, then gov't bonds of around 1,600 billion KHR(Khmer Riel, the official currency of Cambodia) are required every year. Then the next questions is "Can the required amount of gov't bond issuance possibly be absorbed in the market?"

Demand for gov't bonds can be categorized into domestic funds and off-shore funds. Domestic funds have two sources; funds inside the financial system and those outside of the financial system (so-called "money under pillows"). Considering the current situation in Cambodia, off-shore investment is not so probable without sufficient credit enhancement. So, we can conclude that the sources of investment in gov't bonds are domestic funds inside the financial system (mostly in banks) and domestic funds outside of the financial system.

It is observed that we can expect potential demand of around 1.58 billion USD outside of the financial system and, if we add the demand size inside the financial system the maximum size of demand for gov't bonds reaches 2.89 billion USD. The expected maximum amount of gov't bond issuance in the next 5 years is 2.0 billion USD, so the required amount of gov't bonds is able to be absorbed in the Cambodian market.

The next issue is "what is the most effective issuance strategy for gov't bonds?"

First, we should define the target investors. The potential target investors can be wholesale investors(financial institutions) and retail investors. The Cambodian gov't has a plan to issue retail gov't bonds to retail investors, but issuing retail bonds is not an efficient tool for gov't funding.

From a market stability perspective, issuing gov't bonds to retail investors is not so recommendable. If the gov't bonds are attractive enough, they can override the bank deposits and funds inside the deposits can be moved to gov't bonds. Then some banks may face liquidity crises in worst scenarios. From another perspective, a developed bond market and low operating cost structure is required to minimize the risk and cost of gov't funding. Retail issuance is not so contributive to bond market development since it can separate the bond market, and it has a high operating cost structure inevitably because it involves a large number of investors. This report suggests that gov't issues gov't bonds to wholesale investors (financial institutions), and the financial institutions can sell down the bonds to retail investors voluntarily or mandatorily.

The key success factors of the recommended strategy i.e., wholesale oriented issuance are competitive bond yield and liquidation infra.

Needless to say, competitive bond yield is very important for the success of bond issuance. If the gov't bond yield is not attractive, then financial institutions will hesitate to invest in gov't bonds and we should consider the compulsory allotment of bonds to some pre-determined investors. Compulsory allotment can be an easy way to start the gov't bond issuance but it is detrimental to bond market development from long term perspectives.

Attractive gov't bond yield means a heavy burden for gov't fiscal management. If the gov't has difficulties in issuing gov't bonds with competitive yields, the gov't should consider other possible investment merits like temporary tax exemptions or recognizing gov't bonds as reserve assets in central banks.

Bond liquidation infra is also critical for the success of gov't bond issuance. The wholesale investors, i.e., financial institutions manage their portfolio every day, and they may have needs to sell the bonds in their portfolio at any time. If the bonds are not easily tradable, the financial institutions will hesitate to invest in the bonds.

How to design the product structure of gov't bonds is also an important topic. The bonds should be marketable, so USD bonds are recommended considering the Cambodian market situation, but KHR denominated bonds should be issued as well in order to manage the risk of the gov't debt portfolio and it doesn't look impossible to issue local currency denominated bonds if we look at the recent trends of FX rates and inflation rates of KHR. The bonds should be issued in fixed and relatively short term maturity bonds. One year bonds, for example, should be issued in initial stages and issuance of longer term bonds should be increased as the market is developed. The structure of bonds needs to be simple and standardized for the enhancement of market liquidity and low operating cost.

Regarding the bond distributions, banks are the sole potential institutional investors in the current Cambodian market and there is no other reliable financial institution. Therefore, it is recommended to issue to major banks first. The Cambodian gov't can issue bonds by way of competitive auctions among major banks, and the major banks can be "Gov't Bond Primary Dealers" in the future.

One more important thing is that the schedule of issuance should be regular and predictable. The issuance frequency should be periodical, for example, the 15th of every month. The gov't can issue short term bonds and long term bonds in a regular way, e.g., 1 year bonds every month and 3 year bonds every quarter.

For efficient bond portfolio management of bond investors, the liquidation mechanism is very important. It is necessary to build a money market and secondary bond market in Cambodia.

In most cases, money markets are inter bank markets. Normally, treasury officers of banks contact treasury officers of other banks in their closed network and make deals. Most of all, counterpart searching is the key function in money markets. If natural development of a money market by market players is difficult, we can think of a specialized company to promote money market transactions.

There are 3 types of secondary markets: brokers' market, dealers' market and exchange market (cross matching market). There are pros and cons of each type of market. Brokers' market is better for illiquid bonds such as corporate bonds and dealers'market is better for relatively more liquid gov't bonds. Dealers' market or exchange market is recommended for gov't bonds. Dealers' market can give the market players the certainty of liquidation and exchange market is a much more efficient mechanism of matching. If the Cambodian gov't bonds meet the qualifications to be traded in exchange then liquidation through exchange is better, unless dealers' market is an alternative.

To build a dealers' market, a "dealer" is necessary. Therefore, it is necessary to establish an independent specialized company undertaking the gov't bond dealer's role or to designate some existing players (banks) as gov't bond dealers.

To summarize, this reports recommends wholesale oriented issuance (retail issuance is supplementary), issuance of gov't bonds denominated in USD and KHR, simple and standardized product structure, regular and periodical issuance scheduling, and bond liquidation infra by exchange or dealers.

Fiscal Resource Mobilization with Emphasis on Government Bond Issuance

1. Project Objectives

The Cambodian government has been suffering fiscal deficits in recent years and is expecting more red ink in near future. Cambodia has been mostly dependent on concessional loans or aids from international organizations in making up the fiscal deficits so far but it needs to establish an independent system to cover the fiscal deficits by itself. The Cambodian gov't is considering gov't bond issuance as a major tool in financing its fiscal deficits.

The topic of this project is "Fiscal Resource Mobilization with Emphasis on Issuing Government Securities" and the project is divided into 2 parts. The 1st part (Fiscal Forecasting Team) is about fiscal forecasting based on the current Cambodian status and future plan, and the 2nd part (Government Bond Issuance Team) is about how to cover the expected fiscal deficits by issuing government bonds in the Cambodian market which has practically no experience in bond issuance up to now.

This paper will cover the 2nd part and will be organized as follows.

First of all, we should get the fiscal forecasting results from the Fiscal Forecasting Team. The estimated fiscal balance is the starting point of this report.

Once we have the expected fiscal deficits in coming years, we should answer the question, "Is the potential demand for Cambodian gov't bonds large enough to cover the expected fiscal deficits?" If the answer is no, we should find some other alternative tool for gov't funding.

If the ansewer is yes, we should find the best issuance strategy for Cambodian gov't bonds and it is necessary to study 4 perspectives; 1) target investors, 2) product design, 3) bond distribution, and 4) market infra building.

And there are some appendices - the history and current practices of Korean gov't bonds and a few detailed or specific considerations.

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2. Fiscal Forecasting & Government Bonds

2.1. Fiscal Revenue & Expenditure Forecasting

Fiscal revenue and expenditure forecasting was completed by the fiscal forecast team, and the following are the results.

There are four scenarios.

Scenario	Revenue Forecasting	Expenditure Forecasting
1-1	based on point elasticity	by the regression
1-2	based on point elasticity	by the Cambodian government
2-1	based on the arc elasticity	by the regression
2-2	based on the arc elasticity	by the Cambodian government

(Detailed logic of each method is explained in the report by the fiscal forecast team)

- Scenario 1-1

Table 2-1 ●● Scenario 1-1 of Fiscal Revenue & Expenditure Forecasting

(Unit: 1 Billion KHR)

	Total Revenue	% GDP	Expenditures	% GDP	Balance	% GDP
2007p	3,795.8	12.4%	4,958.7	16.3%	-1,162.9	-3.8%
2008p	4,293.6	12.9%	5,493.3	16.5%	-1,199.8	-3.6%
2009p	4,853.2	13.4%	6,082.0	16.8%	-1,228.9	-3.4%
2010p	5,490.2	13.9%	6,738.4	17.0%	-1,248.2	-3.2%
2011p	6,211.7	14.4%	7,466.4	17.3%	-1,254.7	-2.9%

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- Scenario 1-2

Table 2-2 ●● Scenario 1-2 of Fiscal Revenue & Expenditure Forecasting

(Unit: 1 Billion KHR)

	Total Revenue	% GDP	Expenditures	% GDP	Balance	% GDP
2007p	3,795.8	12.4%	5077.0	16.6%	-1,281.2	-4.2%
2008p	4,293.6	12.9%	5204.1	15.6%	-910.6	-2.7%
2009p	4,853.2	13.4%	5666.8	15.6%	-813.6	-2.2%
2010p	5,490.2	13.9%	6132.9	15.5%	-642.7	-1.6%
2011p	6,211.7	14.4%	6711.9	15.5%	-500.2	-1.2%

- Scenario 2-1

Table 2-3 ●● Scenario 2-1 of Fiscal Revenue & Expenditure Forecasting

(Unit: 1 Billion KHR)

	Total Revenue	% GDP	Expenditures	% GDP	Balance	% GDP
2007p	3,364.5	11.0%	4,958.7	16.3%	-1,594.2	-5.2%
2008p	3,730.6	11.2%	5,493.3	16.5%	-1,762.8	-5.3%
2009p	4,134.1	11.4%	6,082.0	16.8%	-1,948.0	-5.4%
2010p	4,584.3	11.6%	6,738.4	17.0%	-2,154.1	-5.4%
2011p	5,084.2	11.8%	7,466.4	17.3%	-2,382.3	-5.5%

- Scenario 2-2

Table 2-4 ●● Scenario 2-2 of Fiscal Revenue & Expenditure Forecasting

(Unit: 1 Billion KHR)

	Total Revenue	% GDP	Expenditures	% GDP	Balance	% GDP
2007p	3,364.5	11.0%	5077.0	16.6%	-1,712.5	-5.6%
2008p	3,730.6	11.2%	5204.1	15.6%	-1,473.6	-4.4%
2009p	4,134.1	11.4%	5666.8	15.6%	-1,532.7	-4.2%
2010p	4,584.3	11.6%	6132.9	15.5%	-1,548.6	-3.9%
2011p	5,084.2	11.8%	6711.9	15.5%	-1,627.7	-3.8%

Among the four scenarios, the last one, scenario 2-2 is the most feasible scenario according to the fiscal forecast team's report.

2.2. Required Amount of Bond Issuance based on Fiscal Forecasting

If we look at the above results (scenario 2-2), we can see that fiscal deficits of 4~5% of GDP are expected in the coming years. Then, we should think about how to make up the expected fiscal deficits.

Generally, there are a few ways of making up gov't fiscal deficits. The simplest way is increasing tax revenue and there are two ways of increasing tax revenue, which are raising the tax rate and increasing the tax collection rate by reforming the tax collection system. Raising the tax rate means that people will have a heavier burden and a high tax rate can be an obstacle to economic development. On the other hand, the Cambodian gov't should make its best effort to reform the current tax collection system, of course. Conclusively increasing tax revenue may not be an option for financing fiscal deficits. Another alternative is borrowing from the central bank and it is an easy way of gov't funding. But borrowing from the central bank may cause inflation, and it is a critical shortcoming.

Compared with borrowing from central banks, gov't bond issuance is a non-inflationary way of gov't funding. Gov't bond issuance can also contribute to the bond market development since the gov't bonds can be benchmark securities in the bond market and the bond market is a very important component in the financial market. Additionally, the central bank can use the gov't bond market as a tool for monetary policy operation if gov't bonds are issued in local currency which can be controlled by the central bank. On the other hand, issuance of gov't bonds means an increase in gov't debt and it might have detrimental effects on the gov't credit rating. So, the issuance amount should be considered carefully so as not to hurt governmental credibility in international market.

To conclude, issuing gov't bonds is recommended to make up fiscal deficits. Among the deficits, long term deficits should be covered by long term bonds (bonds with maturities of more than 1 year) and short term deficits can be covered by short term bills like treasury bills.

If we assume that 100% of fiscal deficits are covered by gov't bond issuance from a conservative point of view, the required amount of gov't bond issuance per year is around 1,600 billion KHR. In a real situation, 100% of fiscal deficits need not be made up by gov't securities since there will be some concessional loans from international organizations.

Table 2-5 ●● Required Amount of Cambodian Gov't Bond Issuance

Year	New Bond Issuance (Maximum)	Gov't Bond Outstanding Amount (Including Conversion Issuance)
2007	1,600 billion KHR (400 million USD)	1,600 billion KHR (400 million USD)
2008	1,600 billion KHR (400 million USD)	3,200 billion KHR (800 million USD)
2009	1,600 billion KHR (400 million USD)	4,800 billion KHR (1,200 million USD)
2010	1,600 billion KHR (400 million USD)	6,400 billion KHR (1,600 million USD)
2011	1,600 billion KHR (400 million USD)	8,000 billion KHR (2,000 million USD)

The Cambodian gov't can increase the amount of gov't bond issuance gradually and it can finance its fiscal deficits without concessional loans from abroad.

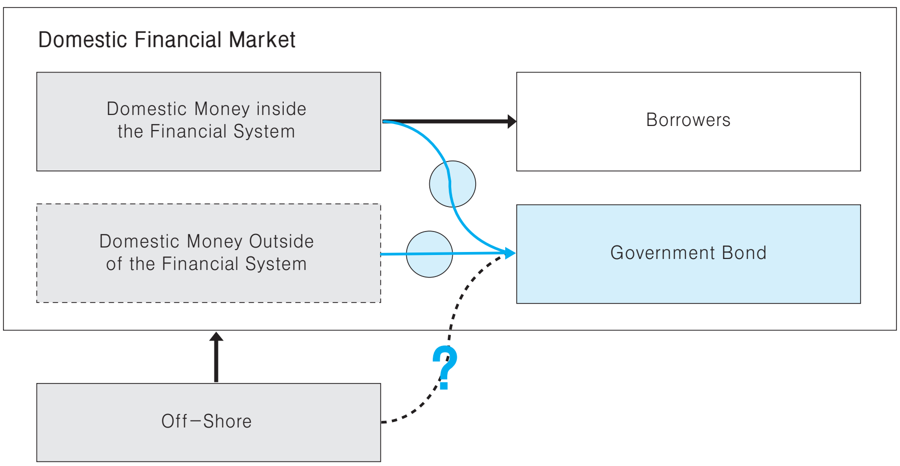
3. As Is Cambodian Market

3.1. Estimation of Potential Demand for Gov't Bonds

Now that we know the expected amount of gov't bond issuance in near future, the next question is "Can the required amount of Gov't Bond Issuance possibly be absorbed in the market?"

So, we need to estimate the potential demand for gov't bonds and what we should consider first is the identity of investment sources of government bonds.

Figure 2-1 ●● Potential Demand for Cambodian Gov't Bonds



As we can see in the above picture, demand for gov't bonds can be classified into Domestic Money and Off-shore Money. Domestic money can be classified into money inside the financial system and money outside of the financial system (so-called "money under pillows"). Considering the current situation in Cambodia, off-shore investment won't be easy without sufficient credit enhancement (e.g. guarantee by international organization, collateralization, structuring like ABS). So, we can conclude that the sources of investment in gov't bonds are domestic money inside the financial system (mostly in banks) and the domestic money outside of the financial system.

Before making a plan to issue government bonds, it is necessary to estimate the potential demand for government bonds. The demand estimation should be done in two categories.

The first one is the demand inside the financial system and the second one is that outside of the financial system.

3.1.1. Demand Size inside the Financial System

As of Dec. 2006, the total asset size of banks in Cambodia is 7.96 trillion KHR, which is equivalent to 1.9 billion USD, and around 23% of bank assets (1.9 trillion KHR) are deposited in the central bank of Cambodia (NBC, National Bank of Cambodia) in the form of reserve assets. The remaining 77% of assets are mostly in the form of loans. So, the maximum size of investment in gov't bonds is 77% of assets, around 1.46 billion USD. Of course all assets cannot be invested in gov't bonds since most should be lent to borrowers. This is just the "maximum" size of potential investment in gov't bonds.

3.1.2. Demand Size outside of the Financial System

As of Dec. 2006, the total size of deposits in Cambodian banks is 1.31 billion USD, and the amount of Gross GDP of Cambodia amounts to 7.2 billion USD, hence the ratio of deposits to Gross GDP is 18%. This is a very low level relative to other developing countries. In Vietnam, the deposits/GDP was only 10% in 1997 and it rose to 70% in 2005. The ratios of developed countries are normally over 100%. Additionally, if we consider the recent changes in Cambodia, i.e., the growing economies, the gradual improvements in soundness of financial institutions and foreign financial institutions' penetration of the Cambodian market, we can expect that the deposits/GDP ratio of Cambodia can reach at least 40% in near future and the demand increase will be 1.58 billion USD. This number assumes that the GDP will remain the same as it is now. If the GDP of Cambodia increases, the number will increase as well.

In conclusion, the ideal maximum size of demand for gov't bonds is 2.89 billion USD and the expected amount of gov't bond issuance in the next 5 years is 2.0 billion USD in total. So, the size of gov't bond issuance is able to be absorbed in the Cambodian market.

3.2. As Is Cambodian Financial Market Environment

In this section, we will briefly review the financial market environment in Cambodia.

3.2.1. Present Financial System in Cambodia

Currently, the financial system in Cambodia is dominated by the banking system. The central bank, the National Bank of Cambodia (NBC) has 18 provincial branches and there are 15 commercial banks and 4 specialized banks. The Cambodian banking system is a decentralized banking system consisting of MFIs and a number of NGOs operating in rural finance.

After the Asian crisis, a lot of banks in Cambodia went insolvent and confidence in the banking system has still not recovered fully. Hence, the current savings rate of Cambodia is very low (meaning there is a large amount of sleeping money in Cambodia).

In the insurance market, there are 4 insurance companies. There is no inter bank market or money market in Cambodia. Neither is there an equity or securities market. There is no securities company currently operating.

On the other hand, the foreign exchange market is active due to the high degree of dollarization (90% of bank transactions are done in USD and USD is mainly used in daily living and a large volume of USD cash is in circulation)

3.2.2. Banking Sector

The Cambodian banking industry suffered a severe restructuring since the Asian Crisis in the late 1990's. After the restructuring, the banks are now very liquid (loans to deposits ratio is around 65%), but despite large resources they are still reluctant to take lending risks. Bank resources are mainly short-term. In fact, almost all deposits and loans are short-term, less than 1 year, and in USD.

But a series of reforms are under way to promote intermediation. A legal basis and basic regulatory framework for the banking system is established. Banking supervision capacity is being developed continuously and the payment system is being enhanced (establishment of KHR and USD clearing houses). An information sharing system among banks will be in place soon and standard accounting principles will be implemented compulsorily.

If banks have cash excesses, they usually buy government securities (Treasury Bills) or deposit in other financial institutions. On the contrary, if there are cash deficiencies in banks, they mostly borrow money from the big financial institutions (international or local).

Banks' Interest Rates for Deposits and Loans are as follow:

Table 2-6 ●● Interest Rates of Deposits and Loans of Cambodian Banks

Interest Rates	Dec-02	Dec-03	Dec-04	Mar-05
Interest rates on deposits in KHR				
* Saving Deposits	2.41	2.19	2.13	2.13
* Fixed Deposit 1 mth	5.6	5.85	5.85	5.85
* Fixed Deposit 3 mths	5.04	4.82	4.68	4.68
* Fixed Deposit 6 mths	6	6	5.6	5.6
* Fixed Deposit 12 mths	7.2	7	6.6	6.6
Interest Rate on deposit in USD				
* Saving deposits	1.6	1.43	1.1	1.1
* Fixed Deposit 1 mth	2.45	2.14	1.75	1.75
* Fixed Deposit 3 mths	3.05	2.68	2.45	2.45
* Fixed Deposit 6 mths	3.51	3.26	3.01	3.08
* Fixed Deposit 12 mths	4.17	4	3.66	3.69
Interest rates on loans in KHR				
Daily	24	24	24	24
1 mth	21	21	21	21
3 mths	21.2	21.2	21.2	21.2
6 mths	21	21	21	21
12 mths	21	21.1	18.7	18.6
Interest Rates on Loans in USD				
Daily	17	17	17	17
1 mth	17.47	16.58	16.25	16.26
3 mths	17.93	17.36	16.62	16.56
6 mths	18.19	17.34	17.28	16.75
12 mths	18.18	17.33	16.65	16.65

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Currently, most banks have little motive for investing in long term bonds. The first problem is that they have short term liabilities and the second one is that without a secondary market they cannot sell down the bonds in their portfolio to cope with their customers' withdrawals.

3.2.3. Bonds in Cambodia

Treasury bills, recapitalization bonds, and certificates of deposit are the only fixed income securities issued in Cambodia so far. Treasury bills and recapitalization bonds were denominated in the local currency, KHR.

Table 2-7 ●● Bonds issued in Cambodia so far

	T-Bill	**Recapitalization Bond**	**Certificate of Deposits(CD)**
Issuer	MEF(through NBC)	MEF	Banks
Investor	Banks(mostly State-owned banks)	Recapitalized institutions(i.e. FTB, Caminco, CambodiaRe.	Banks
Outstanding Volume	KHR 2.9 billion	KHR 44.15 billion	N/A
Currency	Riel	Riel	N/A
Maturity	91 days	2 or 3 years	N/A
Coupon Rate	Around 6% p.a.	3% p.a.	N/A
Issuing Method	Discount acution	(earmarked only for recapitalization purpose	N/A
Transferability	No	No	Yes

Source: Bond Market Development in Cambodia, by Kao Thach. 2nd Bond Market Development Seminar for CLMV, Ho Chi Minh City, 6 June 2006.
*N/A - Not Available

The interest rate for Treasury Bills is determined by the public auction process, meaning that the government will sell the Treasury Bills to those who provide the lowest interest rates (usually 2-5%).

3.2.4. Taxation

Currently, there is 10% tax on interest income from deposits. As for the tax on the interest income and capital gain from bond investment, there is no rule or regulation established at this moment.

3.2.5. Government Savings Bonds

The government has issued recapitalization bonds and treasury bills but the retail investors can not access those products. The Cambodian government is now planning to issue government savings bonds for public access and for public confidence and familiarity with financial services and it is considering USD as the base currency of gov't retail bonds since Cambodia is a deeply dollarized economy.

As for the distribution channel of government savings bonds, we can consider bank branches and post offices. However, the post-offices of Cambodia have not yet conducted banking and financial services. The branches of post-officies in the country have not been well developed. Generally, the post-offices of Cambodia carry out their daily operations such as sending and receiving packages, letters, etc. between Cambodia and the rest of the world. Therefore, bank branches are considered a strong candidate for gov't savings bond distribution at this time.

4. Issuance Strategy - Target Investors

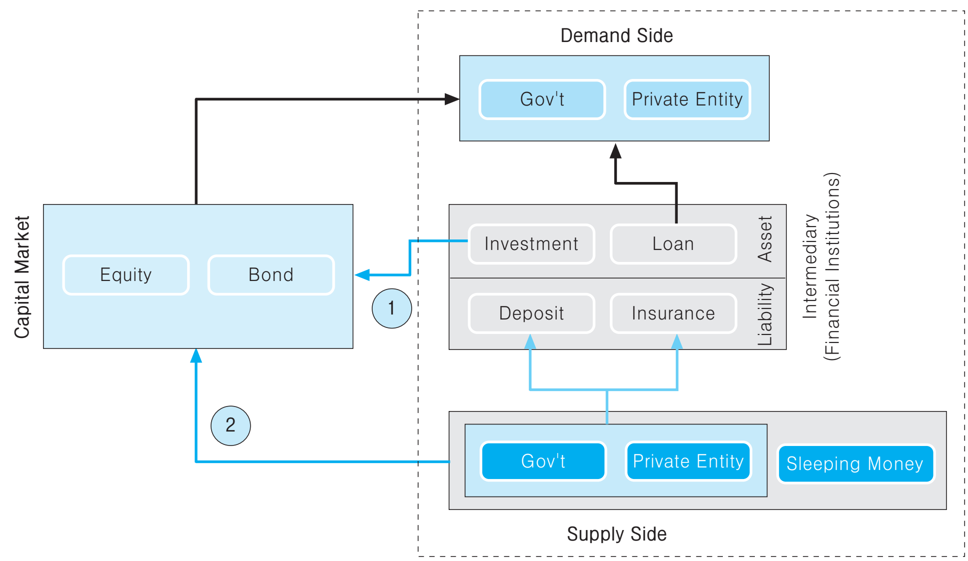
4.1. Key Principles in Setting up Government Bond Issuance Strategy

First, it is necessary to set up key principles in determining the best government bond issuance strategy.

The fundamental key principle is “to set up the most effective issuance structure from a long term perspective”, and it can be narrowed down into 2 pillars. The government is also an economic entity so the gov’t bond issuance strategy should be the most effective one from the perspective of an economic entity. Additionally, the government is responsible for developing and managing the whole financial market, so the government should consider the potential impact on the whole market.

1) Efficient Structure for the whole market maintaining financial market stability
2) Efficient Structure for the government most efficient funding structure from funding risk and cost perspectives.

Figure 2-2 ●● Diagram of General Financial Market Structure



After setting up a long term strategy, short term consideration reflecting the current Cambodian status should be developed.

Then, let's think about possible ways of issuance from basic and theoretical perspectives. In general, the financial market structure is shown in figure 2-2.

A banking oriented financial market like the Cambodian market is composed of 1) Demand Side (Ultimate Borrowers), 2) Supply Side (Ultimate Savers) and 3) Intermediaries which intermediate between the two parties. If capital market instruments like bonds or stocks are introduced in a banking oriented market, we can understand that there are 2 possible ways of investing in those instruments.

1) Investment by Intermediaries - Issuance to Intermediaries (Financial Institutions)

2) Direct Investment by Supply Side - Direct Issuance to Ultimate Savers

4.2. From Market Stability Perspectives

Now, we can analyze the two possible issuance ways from the perspective of financial market stability.

4.2.1. Issuance to Intermediaries (Financial Institutions)

First, let's imagine what will happen if gov't bonds are issued to intermediaries (financial institutions).

If new "attractive" financial instruments come into an existing market, the demand for funds is increasing while the supply side remains the same. Inevitably, some original borrowers cannot borrow money in the financial market any more (from the perspective of asset allocation by financial institutions and from the perspective of market interest rate). This is a so-called "Crowding-out Effect" and this is the 1st risk of issuing gov't bonds. The scenario of the crowding-out effect is shown in figure 2-4.

Figure 2-3 ●● Scenario of Gov't Bond Issuance to Financial Intermediaries

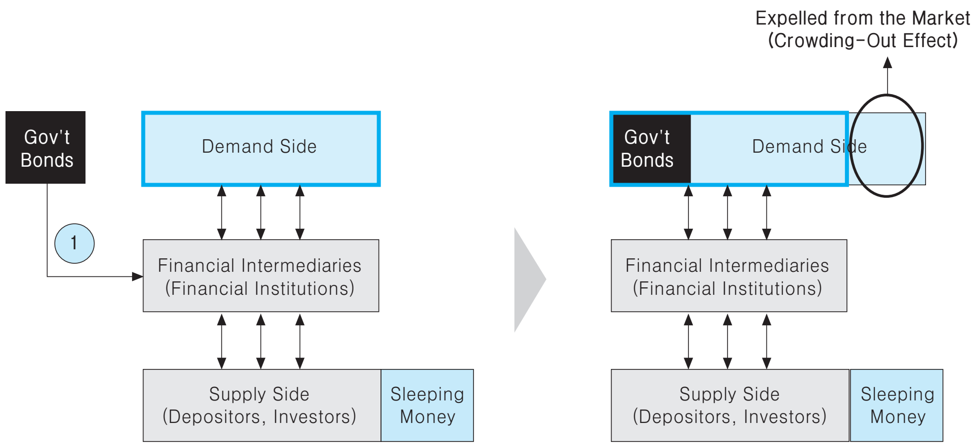
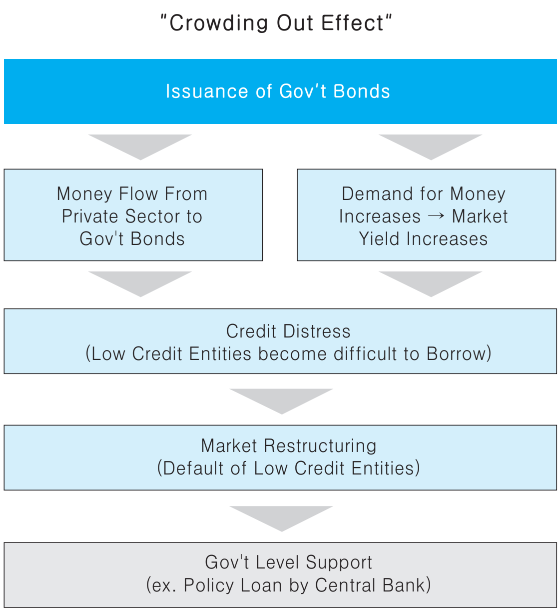


Figure 2-4 ●● Process of Crowding Out Effect

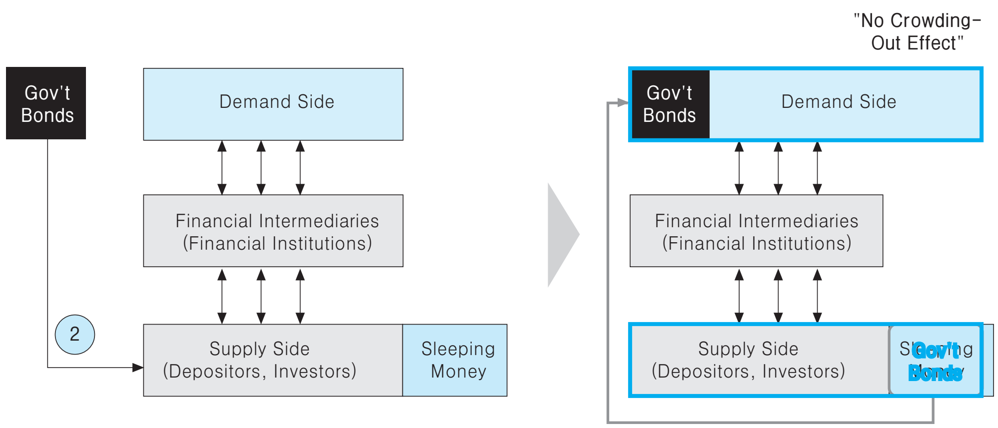


4.2.2. Direct Issuance to Ultimate Savers

Second, we can think about the situation when gov't bonds are issued to ultimate savers directly.

In an ideal case, 100% of investment may come from funds outside the financial system ("Sleeping Money" or "Money under Pillows")

Figure 2-5 ●● Scenario of Gov't Bond Issuance to Ultimate Savers - Best Case



In this case, there is no crowding out effect, and sleeping money is fully utilized. This is the best scenario imaginable.

On the contrary, in the worst case, all investment comes from funds inside the financial system. In other words, no sleeping money is invested in gov't bonds.

If government bonds are issued to ultimate savers directly then there can be some competition between banking products and gov't bonds. If gov't bonds are more attractive than banking products then the funds in the banking deposits can move to gov't bonds. Therefore, banks can face liquidity crunch problems and can go into "bank run" in worst cases. On the other hand, as funds move from deposit to gov't bonds, some original borrowers (low credit borrowers) may not extend their loans any more. Crowding-out effects also exist in this case.

Figure 2-6 ●● Scenario of Gov't Bond Issuance to Ultimate Savers - Worst Case

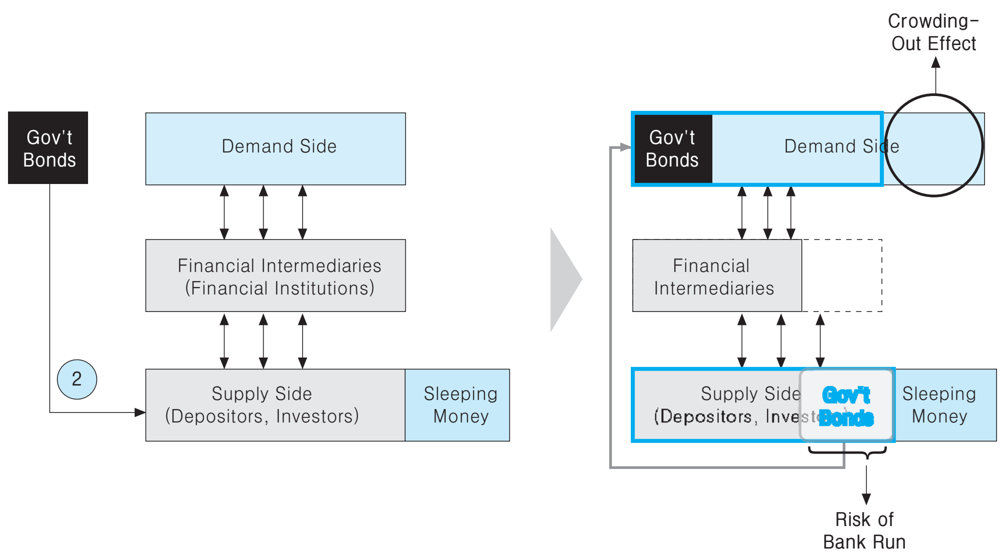
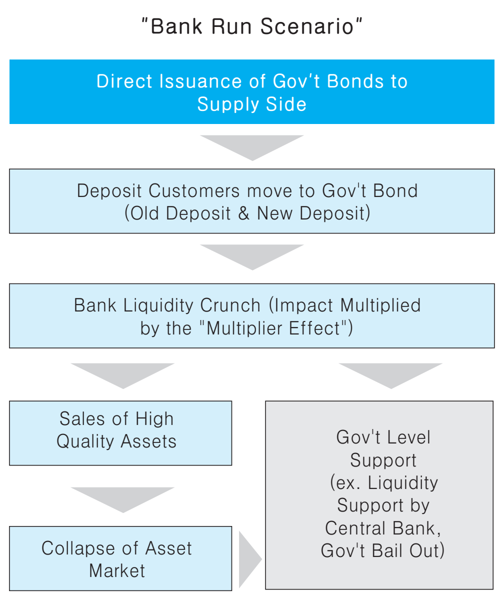


Figure 2-7 ●● Process of Bank Run



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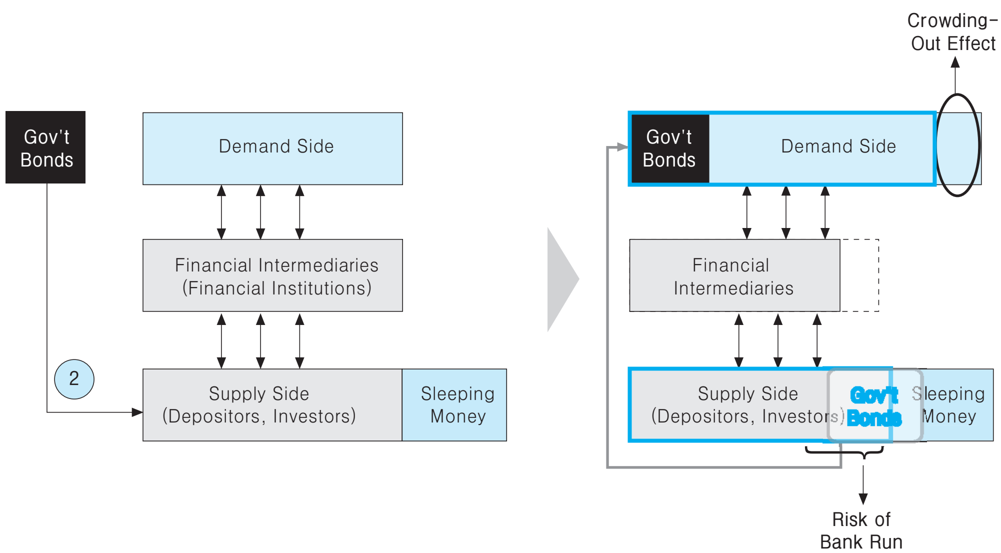
But, both scenarios - the ideal case and the worst case - are not so realistic in the real market. The situation in the real world will probably be in the middle.

Figure 2-8 ●● Scenario of Gov't Bond Issuance to Ultimate Savers - General Case



In the real market, there will be some crowding-out effect and some risk of bank liquidity crunch at the same time, and the size of the risk will not be the same as the worst cases.

4.2.3. Conclusion

To summarize the above explanations,

Table 2-8 ●● Summary of Comparing Issuance Methods from Market Stability Perspectives

Issuance	Risks from Market Stability Perspectives
Issuance to Financial Intermediaries	Crowding Out Effect
Direct Issuance to Ultimate Savers	Crowding Out Effect + Risk of Bank Run

And, the points are…

1) Crowding-out effect means a kind of natural restructuring while a bank run can cause

damage to the whole financial system. A Bank Run is much more critical and should be avoided.

2) The size of risk (crowding-out effect, bank run) will be determined by the amount of gov't bonds issued and market status such as bank portfolio composition and depth of bond market.

Currently, there are few entrepreneurs in Cambodia and the loan/deposit ratio is very low. In an overly liquid market like Cambodian market, the risk of crowding-out effect and bank liquidity crunch may not be so critical, but the gov't should design a strategy of gov't bond issuance in a long term point of view, and the risks mentioned above should be considered .

4.2.4. Additional Considerations to Minimize the Risks

1) Crowding-out effect: unavoidable

2) In the case of issuing directly to supply side in spite of bank run risk:

If competition with bank deposits is unavoidable, it is better for the new instruments to compete with term deposits, not demand deposits, in order to minimize the risk of bank liquidity crunches. If the funds in demand deposits move toward gov't securities easily, the risk of bank liquidity crunches will be large.

The more the new instruments have put back options, the more the new instruments compete with demand deposits, so instruments with no put back option (or put back option with considerable penalties) are recommended to reduce the risk of bank liquidity crunches. In this case, bond investors may not easily liquidate the bonds they invested in, so the liquidation mechanism through a secondary market would be very important and there will be a strong need to develop a secondary bond market.

4.3. From Funding Risk & Cost Perspectives

4.3.1. How to Minimize the Funding Risk in Issuing Gov't Bonds

There are two types of funding risks. The 1st one is the risk of funding failure while the 2nd one is the refinancing risk. Refinancing risk can be defined as the risk that the refinancing of maturing debts becomes difficult or costly.

1st Pillar: How to minimize the risk of funding failure

If the bond investor base is weak, issuance of gov't bonds cannot be successful even when bond yield is far higher than market yield. A deep and wide investor base is necessary.

Adequate pricing of gov't bonds is required for the successful issuance, so an efficient issue price discovery mechanism is necessary.

2nd Pillar: How to minimize the refinancing risk

Accurate forecasting of required bond issuance amount is needed. So, accurate fiscal balance forecasting is required.

With accurate fiscal revenue projection, best-fit maturity structure of bonds is necessary. Therefore, a bond market with long maturities is needed.

If early redemptions are frequent, then the government should refinance by reissuing bonds. Therefore, early redemption should be minimized so the bonds had better be issued without any put back options or with put back options followed by considerable penalties in exercising them.

There are other risk factors such as FX risk and inflation risk (the risk of devaluation of bonds due to inflation). FX risk should be considered when bonds are issued in foreign currencies and inflation risk exists in normal bonds (all bonds except inflation linked bonds). To eliminate these kinds of risks, hedging tools embedded in bonds such as indexation are necessary.

4.3.2. How to Minimize the Funding Cost in Issuing Gov't Bonds

There are two components in funding costs. The 1st one is the cost of interest to be paid to the investors and the 2nd one is the operating cost in the whole business process from issuance to reimbursement.

1st Pillar: How to minimize the interest cost of gov't bonds.

In principle, gov't bond yield is determined based on the market yield.

But, if the bond market is shallow the gov't bond yield should be much higher than the market yield so that all of the required issue amount of gov't bonds can be sold out. A deep bond investor base is necessary to minimize interest cost of gov't bonds.

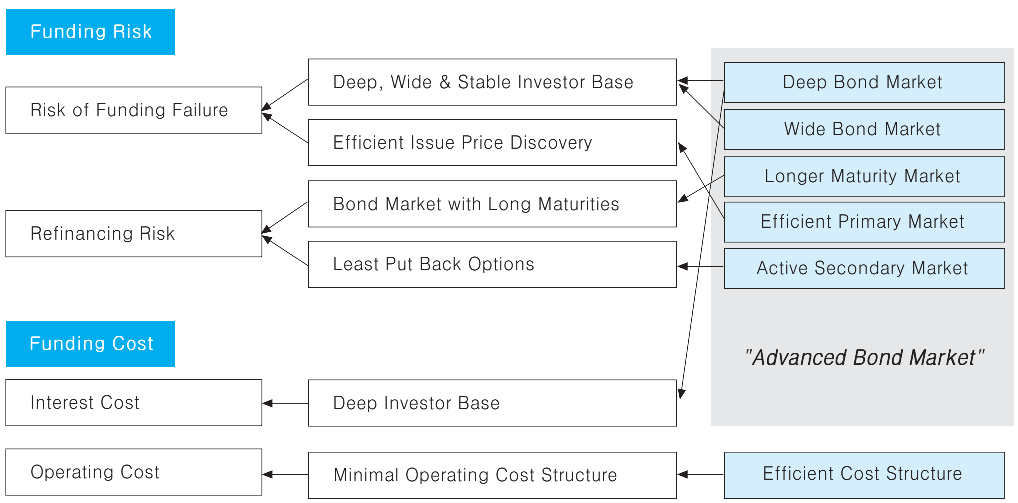
2nd Pillar: How to minimize the operating cost in issuing gov't bonds.

Efficient operating cost structure (small number of deals, simple bond structure, and low cost work process) is required.

4.3.3. Better Issuance Strategy from the Funding Risk & Cost Perspectives

To summarize the above explanations we can get the following picture.

Figure 2-9 ●● Requirement of Minimization of Funding Risk & Cost



In conclusion, the best issuance strategy from funding risk and cost perspectives is the same as the most effective issuance strategy for the development of bond market and for the efficient cost structure.

Then, we can compare the 2 possible ways of issuance in the following table.

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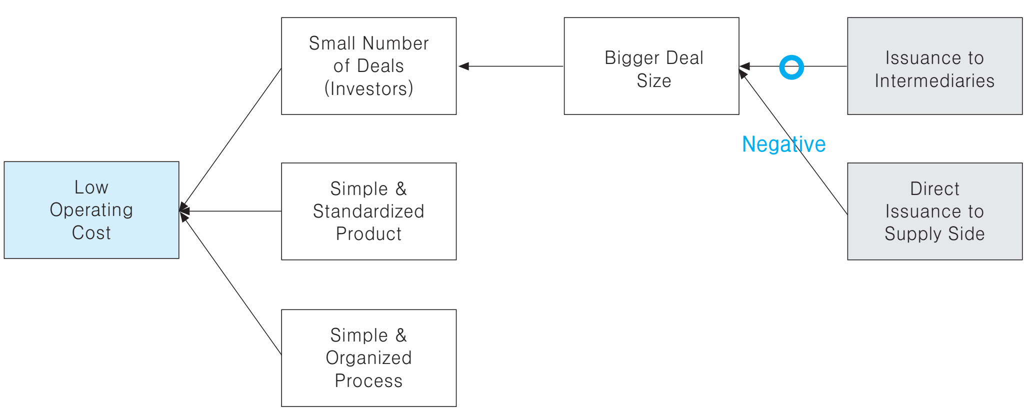
Table 2-9 ●● Comparison of Issuance Methods from Bond Market Development Perspectives

Issuance	Issuance to Intermediaries	Direct Issuance to Ultimate Savers
Investor Base	The more, the better	The more, the better
Primary Market Development	Issue price discovery is easier if applying auction for financial institutions.	Issue price discovery is not easy since auction mechanism is hard to apply. (Gov't should determine the bond yield before the issuance)
Secondary Market Development	Financial institutions have strong needs to trade the bonds actively for their portfolio mgt and hence require advanced intermediary infrastructure.	Individual investors do not trade their bonds very often.
Benchmark Bond & Yield Curve Creation	Gov't bonds with high liquidity can be Benchmark Bonds and gov't bond yields with various maturities can contribute to Market Yield Curve Creation.	Retail bonds are detrimental for bond market integration and hence weaken the market liquidity.
Bond Market Information Infra	Market information flows from financial intermediaries to end customers (final investors) naturally and behaviors of financial institutions are easier to catch and announce.	Behaviors of individual investors are hard to catch.

Generally, we can conclude that issuance to intermediaries is more contributive to bond market development than direct issuance to ultimate savers.

Figure 2-10 ●● Key Components for Low Operating Cost Structure in Gov't Bond Issuance

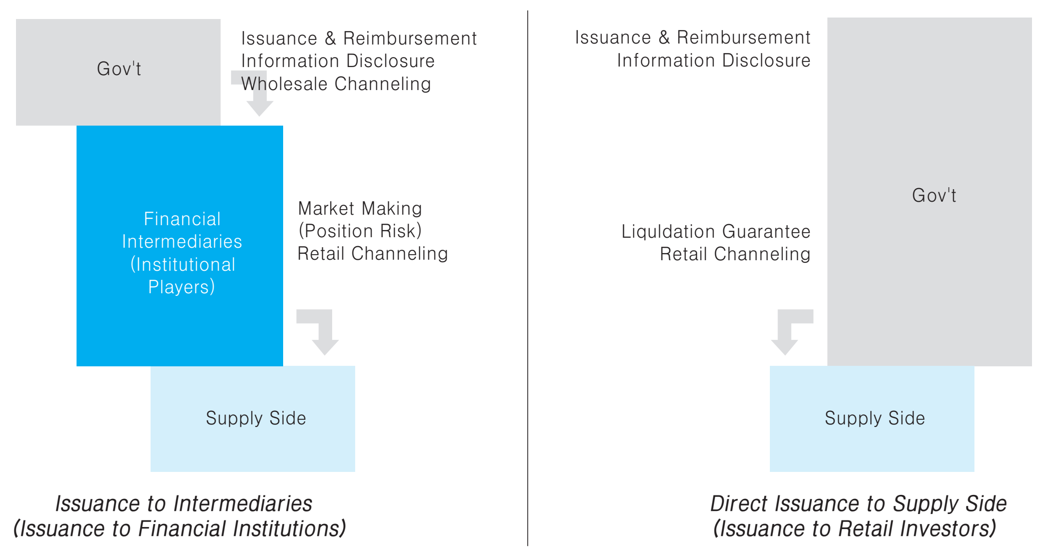


To minimize operating cost, a small number of deals (or investors) are required, and for the small number of investors, a bigger deal size is necessary. For the bigger deal size, issuance to financial intermediaries is effective while direct issuance to ultimate savers incurs a small number of deals in the course of nature.

4.4. Suggestions

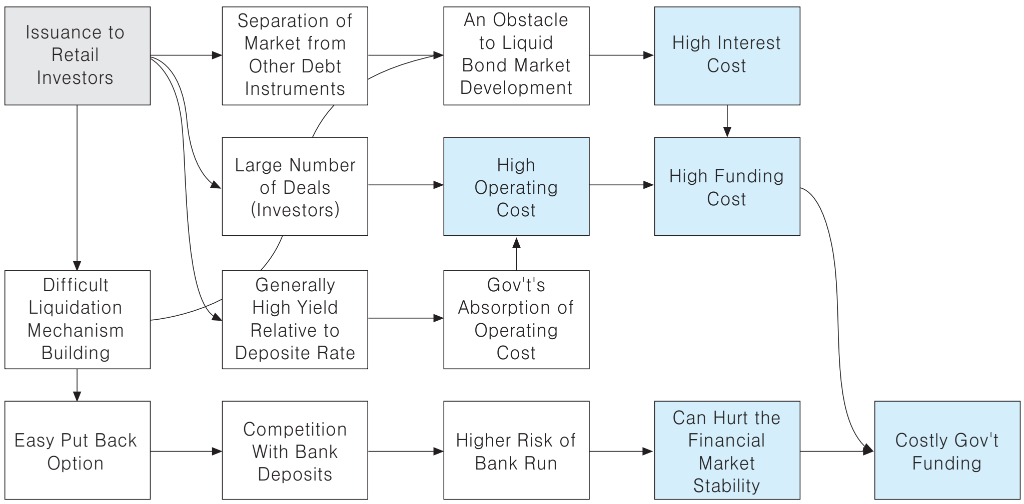
So far, we have reviewed the two possible issuance methods from market stability perspectives and funding risk & cost perspectives. Some roles in issuance are distributed to institutional players in the case of issuance to financial intermediaries, while all functions are done solely by the government in the case of direct issuance to the supply side (issuance to retail investors).

Figure 2-11 ●● Simple and Intuitive Comparison of Issuance Methods



As we have seen so far, issuance to financial intermediaries is a more effective way of gov't bond issuance, while issuance to retail investors can be a costly way of governmental funding. We can understand why in the following diagram.

Figure 2-12 ●● Why Issuance to Retail Investors Results in Costly Gov't Funding



As we can see in the above picture, funding by individual retail investors is costly and risky.

The following table is a summary of the above observations, and illustrates that issuance to intermediaries is a better way for gov't bond issuance.

Table 2-10 ●● Conclusive Summary of Comparing Issuance Methods

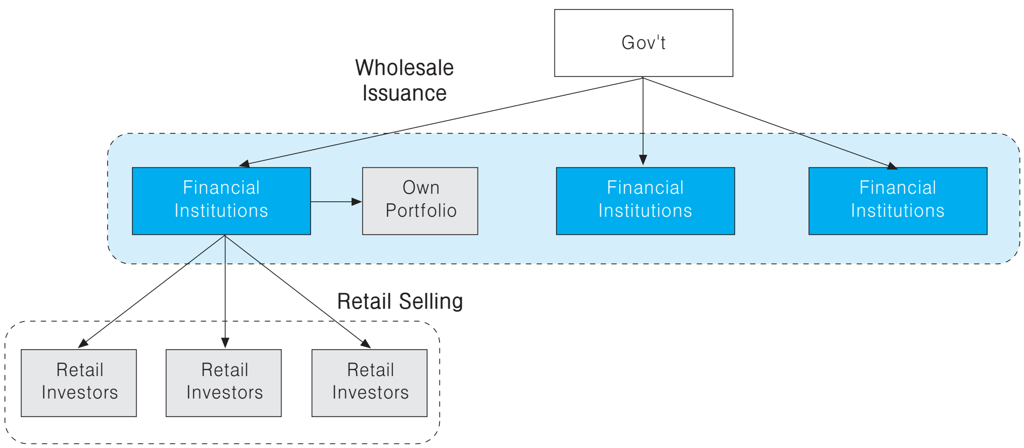
Items	Issuance to Intermediaries	Direct Issuance to Ultimate Savers
Market Stability	Recommended	Not recommended
Bond Market Development	Recommended	Not recommended
Operating Cost	Recommended	Not recommended
Bringing Sleeping Money into Open	No difference if intermediaries can sell bonds to retail investors	No difference
Education for the Public	No difference if intermediaries can sell bonds to retail investors	No difference

But issuance to retail investors can be complementary for effective gov't funding in the sense that it can widen the investor base and it can reduce the funding risk. Both funding methods, funding by financial institutions and by individual members of the public, can be used at the same time to increase the probability of success in funding.

Additionally, the issuance of retail bonds can provide safe long term investment tools for the public and raise the domestic saving rate.

With the discussions so far, we conclude that issuance to financial institutions is a better way of gov't bond issuance and the following is the recommended strategy for gov't bond issuance.

Figure 2-13 ●● Recommended Issuance Strategy for Cambodian Gov't Bond Issuance



First, the government issues gov't bonds to financial institutions (mostly banks). The issuance can be done via auction and the financial institutions who invested in gov't bonds can sell down some of the bonds in their portfolio to retail investors. The retail investors can sell back the bonds to the financial institutions from which they bought them if they want, and financial institutions buy back the bonds from the retail investors. In this mechanism, the liquidation infra in which the financial institutions who invested in gov't bonds can trade the bonds is very important. Without such liquidation infra, financial institutions won't invest in gov't bonds so actively since financial institutions always face liquidity problems day by day.

The recommended strategy has lots of merits. First, there is no risk of bank liquidity crunch. Second, it can contribute to the gov't bond market and the whole bond market development. Third, it has a low operating cost structure. Fourth, as needed by the Cambodian government, sleeping money can be brought into the financial system through retail selling by wholesale investors (financial institutions). Fifth, public education can be carried out by the wholesale

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investors.

Retail selling by financial institutions can be done in 2 ways. The first one is compulsory selling by regulation and the other one is voluntary retail selling.

Before maturation of the gov't bond market, it will be better to adopt compulsory selling by regulation. In this case, retail selling amount and yield are determined by gov't.

The following table is an example of the case.

Table 2-11 ●● Example of Retail Selling of Gov't Bonds in the Short Term

	Issue Amount (Auction)	Issue Yield (Auction)	Retail Selling Amount	Retail Bond Yield
Bank A	100	6%	50	5.5%
Bank B	200	6%	100	5.5%
Bank C	200	6%	100	5.5%

In this case, the margin of the seller is fixed (0.5%) and it is assumed that the compulsory retail selling ratio is 50%. If it is 100%, it means full retail issuances.

But, in the long run, financial institutions should sell down the bonds voluntarily at their own discretion.

The following table is an example of the case.

Table 2-12 ●● Example of Retail Selling of Gov't Bonds in the Long Term

	Issue Amount (Auction)	Issue Yield (Auction)	Retail Selling Amount	Retail Bond Yield
Bank A	100	6%	30	5.4%
Bank B	200	6%	80	5.5%
Bank C	200	6%	120	5.7%

In this case, financial institutions can sell bonds to retail investors and the amount and yield can be determined by the financial institutions. The margin of the seller is the difference between the retail bond yield and issue yield.

The key success factors for the recommended strategy i.e., wholesale oriented issuance are competitive bond yield and liquidation infra.

Needless to say, competitive bond yield is very important for the success of bond issuance. If the gov't bond yield is not attractive then financial institutions will hesitate to invest in gov't bonds and we should consider the compulsory allotment of bonds to some pre-determined investors. It may be an easy way to start gov't bond issuance but it is detrimental to bond market development from long term perspectives.

Attractive gov't bond yield means a heavy burden on the gov't fiscal balance. If the gov't has some difficulties in issuing gov't bonds with competitive yields, it should consider other possible investment merits like temporary tax exemptions or considering gov't bonds as reserve assets in central banks. But those alternative investment merits can be detrimental in other aspects of the whole economy so we should be very careful in adopting such kinds of special favors.

Bond liquidation infra is also critical for the success of gov't bond issuance. The wholesale investors, financial institutions, manage their portfolios every day, and they may have the need to sell the bonds in their portfolios any time. If the bond is not tradable, the wholesale investors will hesitate to invest in the bonds.

The liquidation can be done in 2 ways. The first one is via secondary market, in which the bond investors can sell down their bonds and get the funds back. The second one is via the repo market. The financial product, repo is understood as 2 different concepts; the first one is bond selling with guarantee of buy back and the second one is borrowing with collateralized bonds. Repo is a temporary funding tool for bond holders.

5. Issuance Strategy - Others

So far, we have been searching for the most effective way of government bond issuance from the perspective of target investors and we have reached a conclusion. But there are lots of other detailed considerations in gov't bond issuance. They will be discussed in this chapter.

5.1. Product Design Strategy

5.1.1. Principles of Product Design

How to design the gov't bond is also a very important topic. Before going into detail, we need to set up a few principles.

The 1st principle is "marketability". The product should be designed to be sold to investors easily. So, the product design should consider the investors' preferences.

The 2nd principle is "contribution to the bond market development". The product structure should be contributive to increasing the market liquidity and developing the secondary bond market.

The 3rd principle is "contribution to gov't debt portfolio management". The structure of gov't bonds should not be detrimental to the management of the gov't debt portfolio in terms of FX risk, interest rate risk and refinancing risk.

5.1.2. Base Currency of Gov't Bonds

The key principles in determining the base currency of Cambodia are as follows:

1st, we should consider the governmental debt management and monetary policies by the central bank.
2nd, the bond should be sold in the market. Therefore, market demand should be strongly considered.

Currently, most tax collections (around 70%) are done in KHR, the official currency of Cambodia. But the financial market and economy of Cambodia is very highly dollarized.

Therefore the potential candidates for base currency of Cambodian gov't bonds will be USD and KHR. Both currencies have strengths and shortcomings as the base currency of gov't bonds as follows.

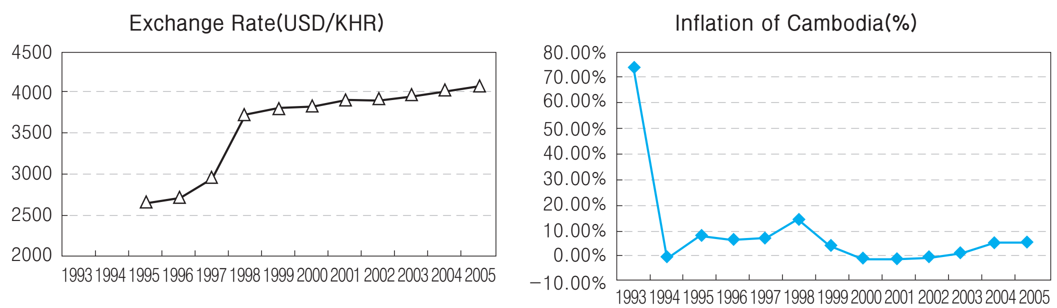
Table 2-13 ●● Pros & Cons of Candidates for Base Currency of Cambodian Gov't Bonds

	USD denominated Bonds	KHR Denominated Bonds
Pros	- Good marketability	- Currency matching with gov't revenue No FX risk hedging cost - Contributive to dedollarization *
Cons	- Currency mismatching with gov't revenue FX risk hedging cost - Not contributive to dedollarization	- Poor marketability

Principally, we should try to match the base currency of Cambodian gov't bonds and the currency of Cambodian gov't revenue in order not to face critical FX risk. If so, the proportion of KHR bonds should be around 70%, but it is not so realistic if we consider the current market demands in Cambodia.

As mentioned earlier, the current Cambodian market is highly dollarized, so KHR bond issuance won't be so easy. But, if we look at the recent trends in FX rate or inflation rate of Cambodia, we can understand that the value of the currency, KHR, is relatively stable nowadays and we can expect that KHR bond issuance will be successful if the bond yield is attractive enough.

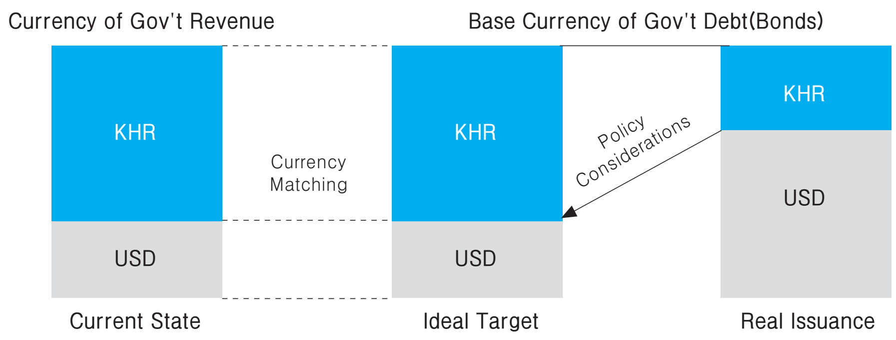
Figure 2-14 ●● Recent Trends of Key Indicators Related to Dedollarization in Cambodia



Relatively Stabilized Since 1998 | Low Level of Inflation Since 1994

Then, it is recommended to issue in both currencies, KHR and USD. At the initial stage the amount of KHR bonds will be very small. But, the proportion of KHR bonds will be increased gradually up to the share of gov't revenue collected in KHR. If it is necessary to promote KHR bonds, the gov't can offer some additional spreads on KHR bonds to make them more attractive to market investors.

Figure 2-15 ●● Recommended Strategy for Base Currency of Cambodian Gov't Bonds



Local currency denominated bond issuance in such a highly dollarized market like Cambodia can contribute to the development of the local currency market and improve the effectiveness of monetary policy operations by the central bank.

5.1.3. Recommendations for Product Design

The product structure of gov't bonds should be simple and standardized. The simple and standardized product can allow the bonds to be sold easily in the market and contribute to the secondary market development. If the product structure is complex, the valuation will be difficult and investment or trading won't be easy. If the products are not standardized, trading volume of each security will be low, meaning less liquidity. Besides, a simple and standardized product structure makes the operating cost smaller.

Table 2-14 ●● Recommended Strategy for Product Design of Cambodian Gov't Bonds

Category	Recommendations
Size of the Issue	Standardization of Face Value
Maturity Structure	Regular Maturity Structure (6 Months, 1 Year, 2 Year, 3 Year, 5 Year, …) - Benchmark Securities & Yield Curve Creation - Investors' Preference - Risk Management (Interest Cost, Refinancing) Maintain fixed portion of outstanding amount for each maturity Issue shorter maturity bond first considering current marketability (Maturity of first issued bonds can be determined through demand analysis of major banks)
Coupon Type	Coupon payment should be periodical even for short term bonds (ex. 1 Year), and coupon period is recommended to be relatively short in early stages to get credibility from the market
Put Options	Minimal or No Put Options

5.2. Bond Distribution Strategy

5.2.1. Principles of Bond Distribution

The next topic is how to distribute gov't bonds to investors, and there are also 3 principles.

The 1st principle is "marketability". The bonds should be absorbed in the market easily and it is necessary to provide the market players with predictability and credibility.

The 2nd principle is "contribution to bond market development". For bond market development, issue prices or yields need to be determined in the market in a fair and transparent way.

The 3rd principle is "contribution to gov't debt portfolio management".

5.2.2. Recommendations for Bond Distribution

Currently, banks are the sole potential institutional investors in the Cambodian market. Therefore, it is recommended to issue gov't bonds to major banks first.

There can be some qualifications for the banks to be gov't bond investors, e.g., asset size, capital size, capital adequacy, historical records of bond investment, and so on, and the qualified major banks can be "Gov't Bond Primary Dealers" in the future. Gov't Bond Primary Dealers are bond dealers who have the privilege of underwriting gov't bonds while having the responsibility of market making in the secondary gov't bond market.

In the process of issuance, issuance by auction is recommended, and the auction method (conventional auction vs. Dutch auction) can be determined through discussion with potential investors (mostly major banks). The range of bid yield can be determined based on the market yield.

The schedule of issuance is recommended to be regular and predictable. The issuance frequency should be periodical, for example the 15th of every year. The gov't can issue short term bonds and long term bonds in a regular way, e.g., every month 1 year bond and every quarter 3 year bond.

Not only the issuance frequencies, but also the issuance amounts need to be regularized. It is better to issue the same amount at each issuance time if possible. The gov't can fix the issuance amount for the year at the beginning of the year, and issue bonds evenly in each month, for example, 50 million USD each month in 2008.

Regular and predictable issuance has many benefits. First, it can reduce the uncertainty of market players. Second, it can facilitate the investors'planning, and third, it can lower the borrowing cost of government. If the government announces the issuance schedule in advance, other bond issuers will avoid the issue dates of gov't bonds in many cases. So, the probability of succeeding in gov't bond issuance can increase and therefore the borrowing cost can be decreased.

Information disclosure is also very important in bond distribution. We recommend open internet based disclosure (ex. MEF website) and the disclosure should be very timely, accurate and detailed. It is also necessary to disclose the purposes of the fund collected by issuing gov't bonds if possible. This is needed to get credibilities from the market.

5.3. Market Infra Building Strategy

5.3.1. Relevant Market Infra for Bond Market Development

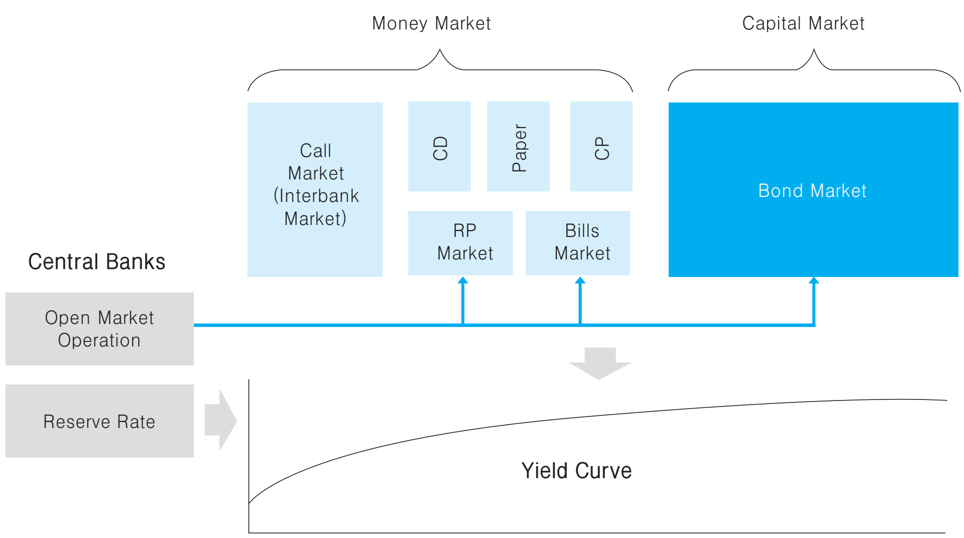
For the efficient bond portfolio management of bond investors, liquidation mechanism is very important. Liquidation mechanism has 2 types, secondary bond market and money market.

Bond investors can liquidate their bonds by selling them down in the secondary market, and the central banks can carry out open market operations through buying and selling bonds in the market as well.

Money market is necessary for efficient short term funding and cash management of market players. Central banks can also use this market in the open market operation through buying and selling RPs or bills.

Monetary policy operations by central banks include open market operation, reserve rate, and so on.

Figure 2-16 ●● Financial Market Structure & Intervention of Central Bank



5.3.2. Money Market Development Strategy

In most cases, money markets are interbank markets. Normally, treasury officers of banks contact treasury officers of other banks in their closed network and make deals. As of now, there is little money market activity in Cambodia.

Most of all, counterparty searching is the key function in money markets. If natural development of money market by market players is difficult, we can think of a specialized company to promote money market transactions. If there an entity that can be counterparty at any time, the market players will easily make transactions with the entity. But the money market transactions are heavy sized deals in most cases, so the specialized company who undertakes the dealer's role will require huge capital. So, the specialized company had better start as a broker's company, not a dealer's company. A Specialized Money Market Brokerage Company is recommended.

5.3.3. Secondary Market Development Strategy

There are 3 types of secondary markets as below.

Table 2-15 ●● Comparison of Intermediary Mechanism of Bond Markets

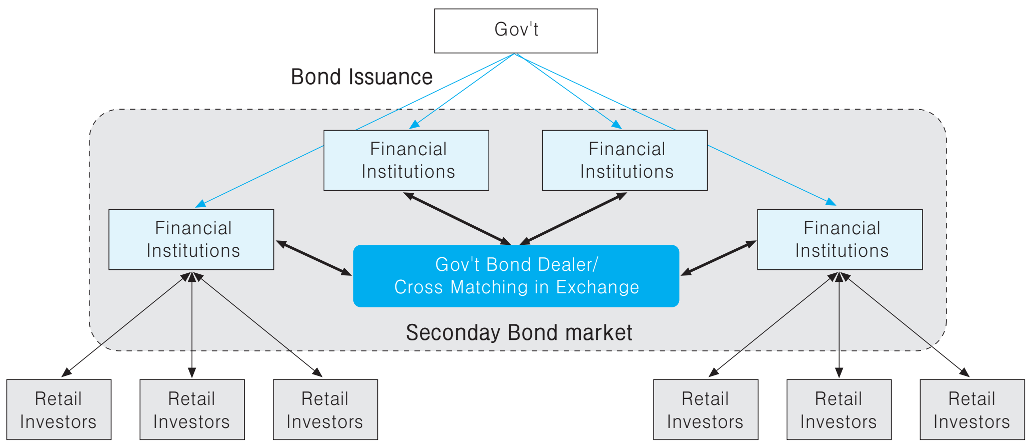
Intermediary	Concept	Pros	Cons
Brokers' Market	Brokerage only, no position taking takes brokerage fees	Light capital requirements of brokers	Lower probability of succeeding in making deals (if no counterparty, no deal)
Dealers' Market	Dealer must provide bid & ask quotes all the time. So, the dealer can be a counter party at any time. Dealer takes position profit is dealer is bid-ask spread	Certainty of succeeding in trading (there is a counter party at any time)	Heavy capital requirements for dealers
Cross Matching (Exchange)	No brokers, no dealers direct matching among bond investors	Most cost-efficient way	Requires high level of standardization, large volume, low deal size, high diversification and high credibility

There are pros and cons of each type of market. Brokers' market is better for illiquid bonds such as corporate bonds while dealers'market is better for gov't bonds which are relatively more liquid. Dealers' market is recommended in the sense that it can give the gov't bond investors the certainty of liquidation. Exchange market can be an ideal form of market, but there are some qualifications for securities to be traded in exchange. In conclusion, if the gov't bonds can meet the qualifications to be traded in exchange then liquidation through exchange is recommended, unless dealers' market would be better.

To build a dealers' market, "dealers" are necessary. Now, there is no dealer in Cambodia, so it is necessary to establish an independent specialized company undertaking gov't bond dealer's role or designate some existing players (banks) to do that role.

The following diagram explains the recommended bond market structure.

Figure 2-17 ●● Recommended Strategy for Gov't Bond Liquidation Infra Building



But, the Cambodian gov't may need to issue gov't bonds before the establishment of liquidation infra. Before building exchange or dealers' market, the Cambodian gov't had better issue relatively short term bonds, say 1 year bonds. The gov't can consider offering bond yields at a little higher than market yield to make the gov't bonds more attractive.

5.4. Issues to be Discussed Further

There are a few more issues to be detailed to realize the gov't bond issuance in the real Cambodian market.

We need to estimate the accurate size of demand for gov't bonds. The proportion of USD bonds and KHR bonds is a very important issue to be settled. The detailed product structure should be designed considering the real market demand. The detailed auction process should be discussed, for example conventional auction vs. Dutch auction. The structure of liquidation mechanism should be determined and additional investment merit to make the gov't bond more attractive should be considered carefully.

To resolve these issues and start gov't bond issuance in the Cambodian market, it is necessary to set up a joint task force composed of MEF, NBC (National Bank of Cambodia) and key market players (may be mostly from banks).

6. Appendix

6.1. Government Bond Issuance by the Korean Gov't

6.1.1. Economic Environment after Liberation from Japanese Colonization in 1945

Korea was a Japanese colony from 1910 to 1945. After liberalization from Japanese colonization, society was unsettled and tax collection was very difficult since the tax collection system was not stabilized.

The Korean War started in 1950 and ended in 1953. Fiscal deficit was serious mainly due to the Korean War. Fiscal deficit was quite usual in the 1940's and 1950's and the inflation rate was quite high.

6.1.2. How to make up Fiscal Deficits

During the US military administration from 1945 to 1948, fiscal deficit was covered by borrowing from central banks.

Since the establishment of the Korean gov't in 1948, how to cover fiscal deficit was a critical issue. One alternative was selling aid goods from international organizations, and another was issuing gov't bonds. Finally, the Korean gov't decided to "develop the economy by selling aid goods and make up the fiscal deficits by issuing gov't bonds". Gov't bonds were considered an efficient and non-inflationary way of gov't funding.

6.1.3. First Issuance of Gov't Bonds (National Foundation Bond)

The National Foundation Bond was first issued in 1950. The Korean gov't issued National Foundation Bonds 17 times from 1950 ~ 1963.

The National Foundation Bond had a maturity of 5~8 years with 2~3 year grace period (no interest payment during the grace period).

The Korean gov't tried to find every possible investment source. How the Korean gov't issued gov't bonds is explained in the following table.

Table 2-16 ●● Distribution of First Korean Gov't Bonds

Investors	Issuance Methods
40 % to general public	- Small size bills: 5, 10, 100 Hwan (former Korean Currency, 10 Hwan = 1 KRW, 1 USD = 910 ~ 920 KRW nowadays) - Most difficult to issue Compulsory allotment to tax payers (4 Million People)
30% to financial institutions	- Large size bills: 10,000, 100,000 Hwan - Set quotas for each financial institution
30% to central banks	- Medium size bills: 100, 1,000 Hwan (considering resale) - After central bank undertakes, resell to others Strong recommendation for public officials to buy (within 10% of salary), compulsory participation (entertainment spots, passing the custom house, …)

6.2. Korean Efforts to Develop Bond Markets in the Early Phase

6.2.1. Bond Market Environment in the 1950's and 1960's

In the early stage of the securities market, most transactions were done by private securities firms. After Korean Securities Dealers' Association was established, many transactions were done in the organization in a more organized manner. Korea Stock Exchange was built in 1956. Most of the transactions in the exchange were trading of gov't bonds (83% was National Foundation Bonds and remaining 17% was stocks).

A developed market economy is required to build capital markets (stock market and bond market). Until the 1960's, the market economy was not developed in Korea. Therefore, the market infra to issue securities didn't exist, but there were some gov't bonds which had been already issued to investors in a somehow compulsory manner and this is why the secondary bond market was relatively more developed than the primary bond market in Korea.

Under these circumstances, the Korean gov't tried to develop its primary securities market and it established an underwriting syndication mainly composed of securities firms in 1962. But the syndication was not so successful and insufficient capital of securities firms was the main reason of the failure. The securities firms were carrying out brokerage business and didn't have enough capital to do the underwriting.

6.2.2. Korea Investment & Development Corporation

Korea Investment & Development Corporation (KIDC hereinafter) was established in 1968. The key functions of KIDC were bond underwriting, bond trading, bond sales, and market control for market stabilization and supervision & guidance for the bond issuers. KIDC was doing almost everything in the primary bond market.

KIDC was very contributive to the development of the primary securities market, but as the bond market was being developed, such an institution was not necessary any more. Functions of KIDC were partly merged with the Stock Exchange, Financial Supervisory Service and private investment companies.

6.3. How Korea Facilitated the Development Finance in the Early Phase of Development

6.3.1. Established Korea Development Bank

The bill to establish Korea Development Bank (KDB hereinafter) was drafted in May 1951, but the incorporation was delayed due to high inflation and difficulty in financing during the Korean War.

After the Korean War, it was required to set up financial institutions to deal with the funds for public finance and international aid funds. Under the economic environment, the bill was passed in Nov 1953 and KDB was incorporated in Apr 1954, right after the Korean War.

KDB is a fully government-owned company, and its major purpose is to provide industrial funds. The financing of KDB is done by capital increase, borrowing from gov't, deposit and bond issuance. KDB is regulated by the gov't directly, while the commercial banks are regulated by the central bank (Bank of Korea).

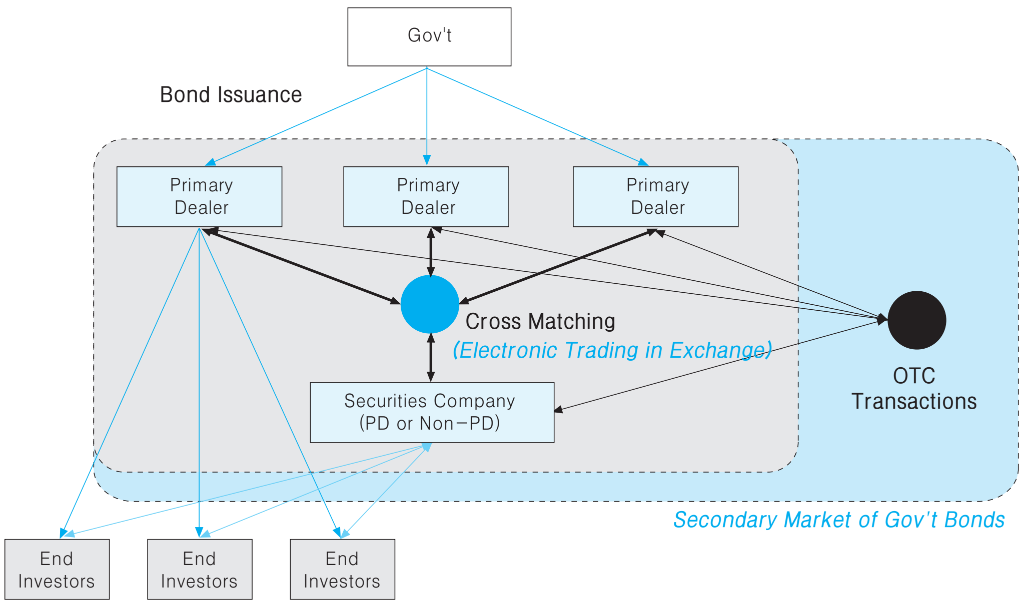
6.3.2. Established Korea Long Term Credit Bank

Korea Long Term Credit Bank was founded by IFC and major financial institutions in Korea. The major purpose of the bank is providing long term credit, and its financing was done mainly by issuing long term bonds (so-called KLB Bond).

With the economic development of Korea, long term development financing was not necessary any more, and under the surge of restructuring of the financial market right after the Asian crisis, the bank merged with a major commercial bank in 1998.

6.4. Current Korean Gov't Bond Issuance Practices

Figure 2-18 ●● Market Structure of Current Korean Gov't Bonds



6.4.1. Target Investors

The initial investors in Korean gov't bonds were primary dealers. There are 19 primary dealers (9 banks, 10 securities firms) as of Nov. 2006.

6.4.2. Product Design

The Korean gov't tried to make the gov't bonds simple and standardized as much as possible and the bonds have fixed maturities.

The Korean government is also trying to maintain a fixed portion of outstanding amount at each maturity for the efficient portfolio management, specifically for the refinancing risk management (ex 3 Y : 5Y : 10Y : 20Y = 20 : 40 : 30 : 10).

6.4.3. Bond Distribution

The Korean gov't adopted the conventional auction in the issuance of treasury bonds until Jul. 2000, but changed to Dutch auction since then.

All relevant information such as issuance plan, auction schedule and results are announced through the MOFE (Ministry of Finance and Economy) website in a very timely manner so that every market participant can access it. An annual plan is announced at the beginning of each year and a monthly plan is announced at the beginning of each month.

Treasury bonds are issued in an even amount every month of a year.

6.4.4. Liquidation Infra

The money market is developed in the form of an interbank market, but there are also specialized money market brokerage companies, e.g., "Korea Money Broker", to do the brokerage service between financial institutions (including non-bank financial institutions).

As for the secondary market, there is an electronic market platform opened in exchange for gov't bond trading, but still the majority of bonds are traded in the OTC market. Gov't bond primary dealers have obligations to offer bid and ask quotes in the gov't bond trading platform in the exchange continuously and non-primary dealer securities firms can also participate in the exchange trading. Individual investors can take part in the gov't bond market in exchange through securities firms.

6.5. Options attached to Bonds

6.5.1. Pros & Cons of Put Back/Buy Back Options

Table 2-17 ●● Pros & Cons of Put Back/Buy Back Options

	Pros	Cons
Put Back Options of Bond Investors	**"Liquidation Tools for Bond Investors"** - Bond investors can manage their portfolio efficiently with put back options and the options allow the bond investors to invest in bonds easily	**"Uncertainty"** - Gov't'will have more refinancing risk & cost (interest cost & operating cost) **"Difficulty in Valuation"** - Difficulty in valuation can make trading difficult. **"Easy Liquidation"** - Putback options make the bonds more close to demand deposits and therefore the competition with demand deposit will be severe. It can arouse Bank Liquidity Crisis in the worst case and if the investors have the right to exercise the put back options they will not need the secondary market so eagerly and the development of secondary market might be slower.
Buy Back Options of Bond Issuers	**"Efficient Gov't Debt Portfolio Mgt Tool"** - Gov't can issue bonds easily	**"Uncertainty"** - Bond investors will have reinvestment risk & cost (interest cost & operating cost) **"Difficulty in Valuation"** Difficulty in valuation can make trading difficult.

6.5.2. Types of Option Exercises

Table 2-18 ●● Comparisons of Option Exercise Methods

	Reverse Transaction at Fair Market Value	Early Redemption at Par Value (Principal + Accrued Interest)
Put Back Options of Bond Investors	This is the right way in principal, but it is impossible without fair valuation.	This can be done without fair valuation. But, bond investors will have limitation in liquidating bonds and managing their portfolios.
Buy Back Options of Bond Issuers	This is the right way in principal, but it is impossible without fair valuation.	This can be done without fair valuation. But, gov't will have limitation in buying back bonds and managing their debt portfolios.

6.6. Auction Methods

There are two auction methods popularly used in the market. The following table compares them.

Table 2-19 ●● Comparisons of Auction Methods

	Conventional Auction	Dutch Auction
Number of Auction-off Prices	Multi-Price auction Different yields among successful	BiddersSingle-Price auction Same yield among successful bidders
Consumers' Surplus	issuers take the consumers' surplus	Bidders take the consumers' surplus
Winner's Curse and Probability of Market Manipulation	Winner's curse Market players can hesitate in participating in the auction Small number of auction bidders High probability of market manipulation	No winner's curse Market players can participate in the auction actively Large number of auction bidders Low probability of market manipulation
Operating Cost	High operating cost due to different prices	Low operating cost due to same price

Some countries are adopting conventional auction and some are using Dutch auction. There have been many debates on which one is the better issuance method, but there is no absolute answer yet.

Chapter 3

Policy and System of the Life Insurance Industry

Summary

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1. Introduction

By introducing life insurance, the Cambodian government wants to give the benefit of life insurance to the people and to invest the capital from policy holders'premiums into economic development. We would like to study what kinds of factors are needed, and what kinds of obstacles we will have in introducing and developing life insurance in Cambodia. We will also look at how other countries introduced and developed their life insurance industries. With such research, we would like to comment on the policies and steps that the Cambodian government will take to introduce and develop life insurance.

2. Insurance Environment in Cambodia

In 2003, a reinsurance company, Cambodia Re, was formed and commenced its operations in order to reduce the outflow of insurance premiums from non-life insurance companies that already existed. In 2006, the three licensed non-life insurance companies are ASIA, CAMINCO and FORTE. Therefore, insurance is not a new industry in Cambodia and people know what it is, but life insurance is not really familiar to people.

MEF is now working with Nomura Research Institute to develop a draft sub-decree on life insurance. Also, MEF have signed an MOU with 4 foreign insurance companies to form a joint venture for life insurance. There will soon be a life insurance company in Cambodia.

3. Basic Environment for Life Insurance Business

The insurance industry can be divided into two parts, life insurance and non-life insurance. Both types of insurance cover almost all kinds of risk we encounter in life. Therefore, if one company handles life and non-life insurance business, then too much risk is incurred. Bankruptcy of an insurance company is a problem not only for the owner of the company but also for all policy holders. That is why insurance companies are supervised by authorities.

The supervisory authorities should have sufficient human and financial resources to accomplish their task. These days, the financial market is converging and complex. The new trend removing barriers between financial institutes requires new regulations for proper and efficient supervision. In order to follow up such a trend, supervisory authorities have to have sufficient human and financial resources.

The government must ensure that existing laws and regulations are readily available to all, i.e. to customers as well as insurers and to domestic as well as foreign companies. This provision is especially necessary in economies in transition because the laws governing insurance are in many cases recent and subject to rapid change.

When the government gives tax concessions, customers may want to buy more insurance products. Tax concessions also provide a chance to educate a population that knows little about life insurance products.

However, inflation, unfamiliarity with life insurance products, underdeveloped domestic financial markets, and lack of actuarial data can be obstacles in developing life insurance.

4. Example of Foreign Countries

From Korea, China, and Vietnam, we can learn the following: interest rates, distribution channels, incomplete sales, and mortality tables. Although the interest rate is changing continuously and durations of policies are for long time periods, many insurance companies sold products with fixed interest rates and had a serious financial problem. Because insurance products have long-term durations, an insurance company has to be wary of the interest rate. In the future, the Cambodian economy will develop and the interest rate will increase. At that time, if high interest rate insurance products are sold, then they will pose a serious problem for an insurance company when the interest rate is low. Therefore, a Cambodian insurance company needs to develop insurance products with a floating interest rate and not a fixed interest rate like other countries that developed floating interest rate products after interest negative margin problems.

Agents introduced life insurance to people who were not familiar with life insurance in Korea, China and Vietnam in the beginning. Though they sold insurance products by using relationships with friends and family, they contributed to developing the life insurance industry in each country. Therefore, the Cambodian authority needs to adopt an agent system.

However, because agents sold products by relationship and insurance companies gave attention to sales, incomplete sales caused problems and resulted in customers' loss of confidence. Education and supervision about incomplete sales were required for continuous growth.

In introducing the life insurance industry, it was general practice to adopt other countries' mortality tables because there was not any experiential data. Since then, they have accumulated their own experiential data for developing their own mortality tables. Therefore, Cambodia also has to adopt other countries' mortality tables and accumulate data.

5. Suggestions for Life Insurance Development in Cambodia

When we consider the whole situation in Cambodia, it is recommended to select a country whose life expectancy is longer than Cambodia's by about 10 years. Accumulating experiential data to develop a Cambodian mortality table is also required. Also, experts in mortality development have to be educated and trained.

The economic level in Cambodia is still low and it is believed that customers can not afford to buy insurance products voluntarily. Therefore, in order to sell life insurance products, compulsory group insurance is recommended for companies, NGOs, and other groups in which employers receive salaries regularly. However, tax benefits have to be given to reduce the resistance against buying insurance products compulsorily. Also, education about insurance benefits and tax benefits is required to smooth the way for compulsory group insurance.

Savings products with protection are recommended for life insurance. Since saving is a priority to households, protection coverage has to be a minor part of the product. Savings products with minimum protection coverage for car accidents, malaria, diarrhea, and respiratory infection, all major reasons for hospitalization, may be attractive to customers. According to Asian traditional values, education of children is an important obligation of households, so education products having both characteristics of saving and protection can meet needs of customers. These products have to have floating interest rates to reduce interest rate risk.

In order to activate the current agent system, we need to change the law. But authorities and companies have to work together to reduce the incomplete sales and protecting consumers.

The Cambodian insurance market is currently not big enough to establish an association of actuaries, independent research center, and education center. Practically, many people will be

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expected to work in not only one such area, but also in two or three when they are established. It would be better to establish one institute, called an Insurance Center, which has integrated functions.

The definition of life insurance, restriction of asset management, and operation of life and non-life insurance business are the issues that authorities and companies have to work on together.

Road Map

We can think of developing the life insurance industry in three steps.

	Step1	Step2	Step3
Products	-Compulsory Group Products -Saving Products -Education Products	-Protection Products E.g. Whole Life, Health	-Annuity Products -Variable Products
Mortality	-Adopt Mortality Table from Outside -Accumulating Data	-Develop own mortality table -Develop morbidity table	
Insurance Center	-Actuary System -Research Function -Education Function	-Revising Actuary qualification -Strengthen agents education about incomplete sales	-Research Center for insurance -Education Center for finance
Distribution Channel	-Editing Agent System	-Strengthen Agent Qualification -Supervision about Incomplete Sales	-Bancassurance
Regulation	-Restrict Asset Management -Introduce Micro Insurance	-Supervision about Risk Management -Revise Regulation on Asset Management -Edit Micro Insurance Policy	-Revise Solvency System -Privatize Micro Insurance

6. Conclusion

Although the roadmap shows 3 steps for developing the life insurance industry, the most important thing is strong government leadership. Authorities have to ask insurance companies to follow the law and policies through strong government leadership. The government must show transparent and consistent policy that customers and insurance companies can count on. Since the insurance industry is based on credibility, when the government loses credibility, customers can not trust insurance companies either and it will lead to setbacks for the insurance industry.

Chapter 3

Policy and System of the Life Insurance Industry

1. Introduction

1.1. Advantages of Developing Life Insurance[7]

Everyone will face an unexpected disease, accident, disability or premature death at some point in life, causing adverse financial consequences. Nobody can predict when and where such things may happen and that is why it is hard to prepare for them. Therefore, it is necessary to have some kind of plan to be ready for such life “surprises” since they leave too much financial burden to oneself and one’s family.

Life insurance is a system that is suited for such needs. Life insurance guarantees a stated sum to an individual or a family in the event of a disease or an accident, or the death of its income earner(s). In doing so, life insurance affords families a measure of protection against the adverse financial consequences of premature death, gives individuals a greater sense of economic security, and can help reduce worry and distress.

Cash value life insurance can be a means for individuals to save. Many people who may not otherwise save on their own may consistently pay for life insurance premiums. Thus, life insurance might constitute a type of quasi-compulsory savings. Even though life insurance is similar to a bank or other financial institutions in terms of economic means for making a fortune, life insurance has many different functions and characteristics. Life insurance has the function of protecting policy holders from numerous accidents or risks as well as a savings function; whereas savings in the bank only has the function of making a private fortune.

7 _ See "Developing Life Insurance in the Economies in Transition", OECD Secretariat.

1.2. The Function of Life Insurance

For individuals and families, life insurance can give them a greater sense of economic security that no other privately purchased financial medium can give. Individuals who can not afford such money and time for protection against uncertain future events can be satisfied with insurance products that provide protection and savings functions at the same time.

Life insurance products may also provide a convenient means for individuals to make financial provisions for retirement. For instance, when a ‘whole life annuity’is purchased, a monthly or annual annuity is given to the policyholder for his/her whole life until death. It eases the burden of the policyholder and government social welfare spending.

Private life insurance can supplement, if not substitute for, benefits provided by the government. This assertion in substantiated by a significant negative correlation between social spending and life insurance premiums. Moreover, the sharp rise in life insurance premiums in the OECD countries may be attributed in great part to the mounting financial difficulties of pension schemes. Governments can now concentrate their efforts on core social protection benefits, while allowing individuals to choose for themselves their desired level and type of additional protection.

Apart from the social role it plays by relieving the government from some of the burden of meeting financial security needs, life insurance can assist economic development in general and the development of financial markets in particular. Because they have thousands of policy holders, insurance companies are able to amass quantities of funds that are important in supporting investment and the national economy. They thereby serve as financial intermediaries between investors and economic agents that lack sufficient financing: households, businesses and in some cases even the government. The emergence of these new types of intermediaries with features different from those of banks, in terms of time frame of investment in particular, will make a major contribution to the development of financial markets. In the OECD countries insurance companies are the largest institutionalinvestors. Unlike bank savings, insurance products have relatively long contracts and their longer-term commitments and the stability of their cash flow can become ideal sources of term financing for governments and businesses.

When any of the events that are covered by life insurance actually happen to the policy holders, benefits must be paid. The loss of policy holders will be recovered by life insurance but society as a whole still suffers loss. Therefore, it is important to prevent accidents in order not to have any kind of loss to society and individuals as well as insurance companies. It is obvious that insurance companies conduct underwriting by medical examination and running a medical center for taking precautionary measures.

1.3. Key Points for Developing Life Insurance

The first key point in developing life insurance is the population's standard of living. As average household income increases, it generally prompts a rise in savings rate, with savings being channeled to bank deposits first and then to products that meet more specific needs, such as life insurance products. However, if a household does not earn enough money to live, then it is really hard to ask the household to buy insurance products for the future because the problem they have is now, not in the future.

Another key point is credibility. Insurance is based on the promise between policy holders and insurance companies to provide money when accidents happen in the future. However, if a life insurance industry that is still relatively new lacks credibility, householders may not necessarily be inclined to alter their prior savings behavior because the new products do not give them the level of financial security they desire.

Credibility or trust is an issue not only for insurance companies but also for banks or other financial institutions. In general, people trust banks more than insurance companies. This is especially true when life insurance is relatively recent −customers have more confidence in banks. Therefore, it is important to not only have credibility with customers but also to be able to compete with banks to earn more credibility from customers.

2. Insurance Environment in Cambodia

2.1. General Information and Economic Indicators

The Kingdom of Cambodia is located in Southeastern Asia, bordering the gulf of Thailand, between Thailand, Vietnam and Laos. The population of Cambodia was 13.5 million people in 2005, consisting of Khmer 90%, Vietnamese 5%, Chinese 1% and other 4%. Life expectancy is 59 years (57 years for males, 61 years for females). The death rate is 9.06 deaths per 1,000 population and 26.9 births per 1,000 according to 2006 estimates.

The GDP of Cambodia was US$ 448 per capita in 2005. Yearly average exchange rate was US$ 1 to 4,113 riel in 2005. The interest rate of riel savings per annum was 2.0 % in 2005 and the inflation rate of riel was 6.7% in 2005.

In 2003, a reinsurance company, Cambodia Re, was founded and commenced its operations in order to reduce the outflow of insurance premiums from non-life insurance companies that already existed. In 2006, there were three licensed non-life insurance companies - ASIA, CAMINCO and FORTE. In 2005, a General Insurance Association of Cambodia (GIAC) was created as a consulting partner with the commissioner to develop the insurance sector. There is no life insurance company working in Cambodia now.

2.2. Regulation and Supervision

In 2000, the National Assembly adopted a law on insurance and a sub-decree on insurance was endorsed by the Royal Government of Cambodia (RGC) in 2001. Later, a number of regulatory frameworks for implementation were issued. The inter-ministerial Prakas on compulsory third party liability insurance were introduced in 2003 on motor vehicles, passenger transport and construction sites. It followed Prakas on the accounting guidelines in 2005, Prakas on defining solvency[8] in 2005, and new Prakas on motor vehicle insurance stickers were introduced in 2006.

The Department of Financial Industry (MEF) has been assigned to take the roles of regulator and supervisor of the insurance industry in Cambodia. Now, in order to strengthen regulations, the Cambodian government is considering revising and establishing a new regulatory framework including prudential law and regulations for effective supervision of insurers.

8 _ Solvency ratio shows whether the insurance company can pay the amount of money to insurance policy holders and it is an index to evaluate the management condition of insurance companies

Department of Financial Industry (MEF) is conducting off-site financial reviews of insurance returns to flag potential problems as part of an early warning system and on-site inspection of licensed insurers at regular intervals. Also, MEF cooperates and assists the general insurance association of Cambodia (GIAC) in implementing a market tariff for auto and fire insurance initially.

In order to strengthen supervision, great focus will be given to policy retention of premiums in countries that receive assistance with economic development. Also, vigilant assessment of solvency margin will be conducted to ensure a higher level of financial security for policy holders. Guidelines will be established for insurance supervision, particularly the financial surveillance of licensed insurers. MEF will cooperate with NAC to update accounting and auditing standards for the insurance industry.

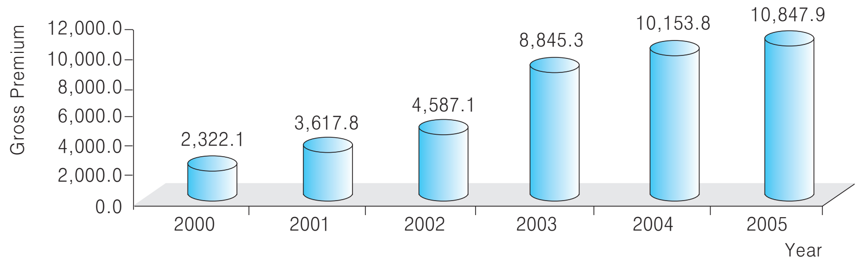
2.3. Non-life Insurance Industry

There are three non-life insurance companies working in Cambodia. CAMINCO is a domestic company and ASIA and FORTE are foreign companies. Their premium incomes sharply increased and they accomplished US$ 10,847,914 in 2005, compared to their premium income of US$ 2,322,129 in 2000.

Table 3-1 ●● Market Development (Premium income)

	1999	2000	2001	2002	2003	2004	2005
Auto	1,153.9	892.2	969.2	1,308.1	1,619.1	2,032.2	1,970.1
Fire	578.0	509.5	1,007.5	2,188.4	2,914.0	2,728.1	2,441.0
Marine	108.5	126.3	144.6	171.3	244.0	243.1	322.1
Engineering	8.8	44.5	116.5	162.3	457.2	275.0	1957.0
WC	159.2	198.7	280.6	343.4	159.0	129.1	135.1
PA	1.1	19.5	140.6	226.0	346.0	556.1	1148.0
H&S	243.7	301.8	410.1	387.0	438.0	561.0	797.0
Miscellaneous	191.6	229.7	548.6	700.6	2,668.0	3,629.3	2077.5
Total	2,444.7	2,322.1	3,617.8	5,487.1	8,845.3	10,153.8	10,847.9

Figure 3-1 ●● Total Gross Premium



2.4. Policy and Plan for Life Insurance Industry

The MEF is working with the Nomura Research Institute for developing a draft sub-decree on life insurance. It has signed an MOU with four foreign insurance companies to form a joint venture for life insurance. These four foreign insurance companies are the NTUC Income Insurance Cooperative Limited of Singapore, the PT Asuransi Central Asia of Indonesia and Asia Insurance Company Limited of Special Administrative Region, Hong Kong, and Bangkok Insurance Public Company Limited of Thailand.

The Cambodian government has a blueprint for financial sector development for 2006-2015. This blueprint consists of steps that should be taken to move the industry forward. These steps include immediate term, intermediate term, and long term objectives. In the immediate term, the Cambodian government wants to develop an appropriate strategy for life insurance development, adopt necessary elements of a legal framework, establish financial reporting standards and enhance inter-ministerial collaboration on compulsory insurance. Privatization of CAMINCO is also one of the objectives in the immediate term. In the intermediate term, the Cambodian government wants to revise the regulatory framework relating to licensing and operation of companies that sell life insurance polices, set up consumer protection and customer awareness, establish a national training institute, adopt an actuarial system, and study the development of a private voluntary pension system in Cambodia. In the long term, the Cambodian government should implement social security law, issue the appropriate supporting instruments as well as develop a system of regulation to deal with private pensions and examine the advantages of including a mandatory savings plan for formal sector workers.

3. Basic Environment for Life Insurance Business

3.1. Regulatory Environment

The insurance industry can be divided into two parts, life insurance and non-life insurance. Life insurance is a contract between the policy owner and the insurer, where the insurer agrees to pay a sum of money upon the death of the insured. In return, the policy owner agrees to pay a stipulated amount called a premium at regular intervals. Non-life insurance means insurance other than life insurance such as fire, marine, accident, motor vehicle and household insurance. Both cover almost all kinds of risks we may experience in life. Therefore, if one company handles both life and non-life insurance business, the company is taking too much risk. The bankruptcy of an insurance company is a problem not only for the owner of the company but also for all its policyholders. This is why insurance companies must be supervised by an authority or the government. In order to reduce the risk for one insurance company, life and non-life insurance activities should be separated so that one activity is not forced to support the other. It is a way to protect one activity from the other activity when it has a financial problem and it is an international practice. However, health insurance may be categorized as both life and non-life insurance. In the case of Korea, life and non-life insurance companies are able to sell health insurance products together.

One of the main objectives of regulation is to protect the consumer by supervising the solvency of insurance companies, since an insurance policy represents a promise to pay a future benefit if and when certain stipulated events occur. The transaction is therefore based on the customer's confidence that his or her chosen company will honor its commitment. This confidence is particularly necessary in life insurance, because the amount of money involved may be very large and especially because the commitments span a long period of time. But in emerging economies, public confidence is particularly fragile because insurance is not yet an established part of the culture, and in many cases financial disasters and insurance company failures are still fresh in people's minds.

The supervisory authorities should have sufficient human and financial resources to accomplish their tasks. These days, the financial market is converging and complex. The new trend in removing barriers between financial sectors requires new regulations for proper and efficient supervision. In order to follow up on such trends, it is crucial for supervisory authorities to have the necessary human resources and financial resources. Without them, the financial industry will not work efficiently and there will be loopholes that are not illegal but are not acceptable in the market. Therefore, education and training are consistently required for people working as supervisory authorities as well as companies. Authorities and companies need to work and research together for general or special issues concerning the life insurance industry. Universities can serve the function of providing supervisory authorities and insurance companies with experts who are well educated and trained with actuarial mathematics, statistics, and economics as well as insurance knowledge. With many experts, some insurance institutions such as the actuarial association can be developed to study and research new issues raised in the insurance industry that allow supervisory authorities to implement their policies efficiently.

The government must ensure that existing laws and regulations are readily available to all, i.e. to customers as well as insurers and to domestic as well as foreign companies. This provision is especially necessary in economies in transition because the laws governing insurance are in many cases recent and subject to rapid change. Regulatory authorities should not exercise their power in a discretionary manner but, on the contrary, should clearly explain their licensing procedure (defining, inter alia, criteria for licensing decisions), the way in which supervision is implemented and the steps it takes to alleviate financial difficulties encountered by certain companies. Insurers' attitudes towards supervision will be more co-operative if they have the conviction that they are dealing with authorities who are qualified and independent.

In addition, regulations must be stable enough so that insurers and consumers may enter into contracts knowledgeably and with confidence. For example, the proposed new tax concessions for life insurance products will fail to produce the desired effect if consumers are afraid that the favorable provisions are only very temporary. However, this must not keep the supervisory authorities from undertaking the necessary reform. Applying the principle of transparency simply demands that the various parties concerned are informed and involved in the reform process, and that they be involved from the outset. In this way, each party will be able to prepare gradually for any changes that are necessary.

3.2. Tax Concessions

The majority of OECD countries grant tax concessions for the purchase, ownership or execution of life insurance policies. In some cases, relatively slight and merely designed to simplify tax administration, they may alsobe substantial and intended to encourage people to purchase or maintain policies in order to encourage a shift in national savings towards life insurance, promote long term savings or prompt individuals to help ensure their own financial security. Policies that focus primarily on the customer's survival (e.g. mixed policies and pure annuities) are the main targets of these tax concessions because the premiums from such products that are usually long term can be used for investment for a long time. In addition, because the bank does not have a function to protect customers from future uncertainty, giving tax concessions to insurance products increases the competitive power of the insurance industry.

The effectiveness of such tax policies is clear in regard to shifting national savings to life insurance and promoting long-term savings. It allows a chance to educate a population that knows little about life insurance products, and to motivate them to opt for a sufficient level of coverage.

In the case of Thailand, tax exemption is given for ten years in order to develop insurance and to compete with banks. In the case of Korea, tax reduction is given for buying and keeping protection insurance products.

3.3. Obstacle

3.3.1. Obstacle - Inflation

In stable economies, insurance guarantees are often expressed in nominal amounts. Furthermore, insurance premiums are generally set at the beginning of a contract; there may be provision for adjustment clauses, but such clauses are still relatively rare. In the case of health insurance, there are some health insurance products that cover the money that the customer really spent to cure or heal illnesses, but such products have relatively short time contract periods. Therefore, if the policyholder wants to keep such products, then he has to renew the contract with new premiums.

High inflation, which is common in emerging economies, makes it essential to take this problem into account, since the expression of guarantees in nominal amounts constitutes a major risk for the holders of life insurance policies. Policyholders are not necessarily aware of the fact that they are running this risk, which can give rise to mistrust and feelings of having been duped. For example, customers may have been promised, say, $1,000,000 at maturity. But, if inflation is so high that the real value of $1,000,000 is just 100 dollars, then customers may feel betrayed and will not want to buy insurance products anymore.

3.3.2. Obstacle - Unfamiliarity

The range of life insurance products marketed in an emerging economy must take into account that consumers know little or nothing about the characteristics of or how the financial market works. Consumers are unfamiliar with savings products or the limitations of the coverage. Therefore, insurance companies have little incentive to develop high-quality products for consumers who are incapable of telling the difference between them and products of far lower quality.

3.3.3. Obstacle - Underdeveloped Domestic Financial Markets

In order to do business confidently and effectively, insurance companies need to be able to invest their assets in markets that are sufficiently well developed and efficient. And yet, in most emerging markets, the financial markets still offer a choice of products (bonds with a variety of maturities and issuers, shares in domestic or foreign companies, etc.) and auxiliary services (e.g., auditing firms and rating agencies) that are limited. Extensive insurance operations therefore can not be developed unless companies have sufficient access to foreign financial markets. However, in order to invest financial resources into a country, many countries limit the proportion of investment that may be made abroad or require prior government authorization.

In Cambodia, developing the bond market is a key issue for developing the life insurance industry as well as non-life insurance. Without a bond market, life insurance companies will have a hard time finding a proper instrument for investing their assets, which means that they can not keep the assumed rates of insurance products unless they invest money abroad. It may be obvious that insurance companies will invest their assets abroad. The Cambodian government may not accomplish the purpose of introducing life insurance that will result in accumulating assets to invest in economic development.

3.3.4. Obstacle - The Lack of Actuarial Data

Insurance companies in emerging economies also suffer from the lack of a reliable database on which to base their actuarial calculations and tariffs. In countries where notable statistical data on health problems were not recorded properly (if at all) and ways of life have undergone or are undergoing sudden change, life expectancy data alone cannot provide a sufficient basis for computing life insurance premiums, even if the most sophisticated actuarial methods are used. It is only by instituting a comprehensive and reliable system of data collection that this obstacle can be overcome. To set up such a system is probably a matter for the State, but private insurance companies can help by constituting their own databases and pooling them.

Before gathering sufficient and reliable data to calculate life insurance premiums, in general, mortality tables or actuarial information of neighboring countries are used for calculating premiums and developing insurance products. But using another country's information must be done very carefully because even though they may be neighboring countries, they have many different qualities. For instance, race, economic levels, life style, etc. may all be quite different.

Cambodia is a very young country in terms of population. The young age group makes up a major part of the population. Therefore, although life expectancy is relatively lower than other countries, Cambodia's life expectancy will increase rapidly when Cambodia's economy develops. Hence, this fact must be taken into consideration when using another country's mortality table.

As long as data remain insufficient, substantial margins of error will have to be factored in to ensure that pricing does not cause a deficit. Some of the resultant income should then be returned to the insured in the form of profit-sharing.

3.4. Required System

In order to develop the life insurance industry, some systems are required to perform the necessary functions that run the life insurance industry smoothly and efficiently. Indispensable functions or required systems for the life insurance industry are supervising, researching, actuarial systems, distribution channel system, consumer protection system, policy making, etc. But there is no single right answer to who and what institution should be in charge of what function. It is dependent on the situation of the country because each country has very different economic backgrounds and philosophies.

3.4.1. Association of Life Insurance Companies

An association of life insurance companies is required for presenting insurance companies' opinions to authorities and to improve market efficiency. The main functions may include proposing policies and systems related to life insurance to the government, enlightening relevant statutes such as insurance law and offering suggestions for amendments.

3.4.2. Actuarial System

An actuarial system is a basic requirement for the insurance industry. Insurance based on statistics and mathematics as well as the economy requires experts who are well trained and educated for handling insurance issues. This is why most of the countries that have an insurance industry have an actuarial system.

3.4.3. Distribution Channel

Insurance products are so complex that the customer cannot understand the coverage of insurance products without explanation by insurance experts. With so many different insurance companies and types of insurance in today's market, it is sometimes difficult for a person to make an informed choice.

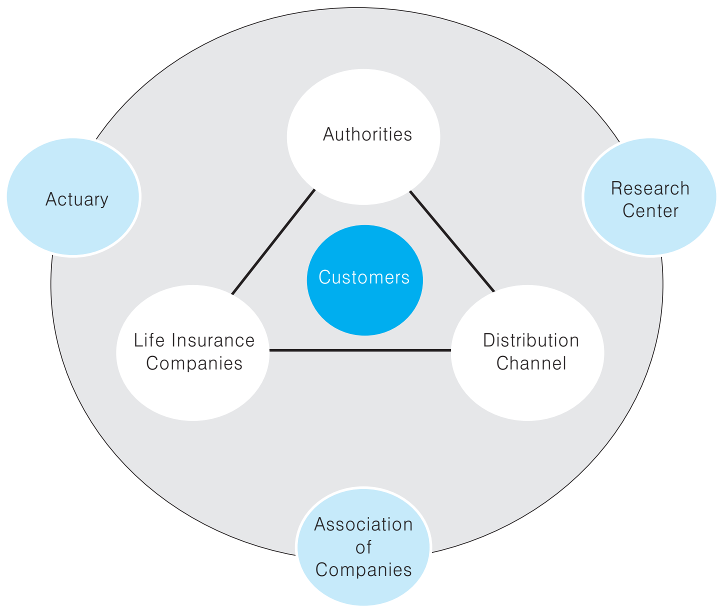
On the other hand, the distribution channel can cause some problems such as incomplete sales because customers are overly dependent on the explanation by agents because customers do not know insurance products well. So, customers readily believe whatever the agent says. It is very easy for agents to cheat customers by selling products that are not really appropriate or suitable for the customers but simply results in lots of sales and commission for the agents. Therefore, a consumer protection system is required. Some sort of qualification or certificate system for agents is also necessary.

Agents usually contribute greatly to the development of the life insurance industry, especially in the beginning. They help customers to understand and promote the purchase of life insurance products when customers are not familiar with or are new to life insurance. Therefore, a distribution channel is very important for introducing and developing life insurance.

3.4.4. Independent Research Center

Insurance is much more complex than other industries. Authorities and companies

Figure 3-2 ●● Required System for life insurance



sometimes need solutions to new issues that they face. New policies or new products should be examined before introduction into the industry because insurance has an aspect of public welfare. Such issues and problems have to be researched by experts from industries, universities or so-called research centers. Research centers can study management strategies, marketing methods, asset management, financial soundness, etc. for authorities and insurance companies.

However, these issues are generally related to many people and groups who are interested in such issues for their own interest because such issues can change the market and eventually affect their businesses. They usually try to reflect their opinions in the resolution of issues. Therefore, a research center should be independent and it can not have any influence from authorities or other interest groups.

4. Example of Foreign Countries

4.1. Korea

4.1.1. Overview

The Korean insurance market was the seventh biggest market in the world in fiscal 2005. The total insurance premium in fiscal 2005 in Korea was $82.9 billion and increased 20.5 % from the previous year. Its share in the world market was 2.42%.

Since 1997, thirteen insurance companies have ceased to operate and six new insurance companies have entered the market. Forty-three insurance companies were operating in the market as of the end of 2005: twenty-two life insurance insurers and twenty-one non-life insurers, including one guarantee insurance company and one reinsurance company.

The laws related to insurance in Korea are insurance business law and its enforcement regulations. The law was promulgated on 15 January, 1962, and has been amended several times.

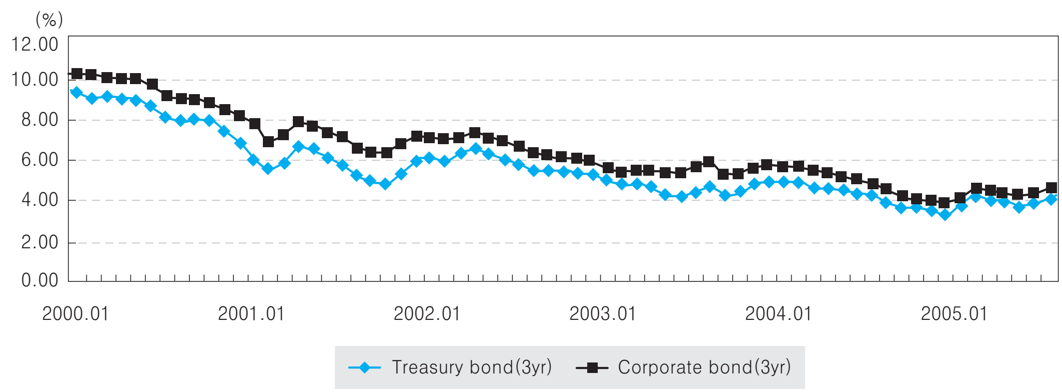
In 1977, all insurance related laws were consolidated into the insurance business law. The insurance business laws consist of administrative supervision regulations for the private insurance industry, regulations on organizations and business activities of people conducting insurance business, insurance soliciting, and other insurance related matters.

In 2000, the laws and regulations were modified to allow all types of financial institutions to form alliances to move into the "non-core business"of other financial institutions. This was the first step toward a full convergence of financial institutions in Korea.

In 2003, the insurance business law and its enforcement regulations posed new challenges by focusing on overhauling existing regulations in the insurance sector in an effort to meet global standards in terms of asset management, market competition, supervisory systems and consumer protection. This was the second step toward financial convergence.

On the other hand, from 2000 the interest rate dropped, hugely damaging life insurance companies that sold products with high interest rates before 2000. After this huge damage, Korean life insurance companies realized how important the interest rate is and most life insurance companies began to develop non-fixed interest rate products.

Figure 3-3 ●● Changing Interest Rate in Korea



The agent system has been a key factor in developing life insurance in Korea. Now, the number of agents is decreasing but it is still a major distribution channel in Korea, though new distribution channels like Bancassurance and home-shopping via TV or the Internet are working.

4.1.2. History of Product Development

- 1950s: Group Insurance Product Sale

After the Korean War, Korean insurance companies mainly developed group insurance products due to the lack of customers' acknowledgement of life insurance as well as having an insufficient sales force. After many insurance companies were established and they set up sales forces like agents, they began to develop individual insurance products such as education products and endowment products and they began to sell whole life products in 1959. At that time, Korea adopted the Japanese mortality table.

- 1960s: Savings Product Promotion

In 1962, the Korean government established an economic development plan and established the law of National Savings Unit[9] in order to create domestic capital. According to the law of

9 _ Law of National Saving Unit was established for increasing savings. Almost all people were asked to organize units by company, group, or region and to save money in a nearly compulsory way. This law was terminated in 1988.

National Savings Unit, insurance companies were appointed as savings institutions. Since then, lots of group insurance and saving products have been sold. Premiums from group insurance products made up more than 70% of the total premiums. Saving products with short maturities (two to five years) were especially activated after the interest rate was increased in 1965.

- 1970s: Accident Insurance Promotion

With economic development, Korean society was industrialized and urbanized and as a result, accidents occurred more often. Insurance companies began to develop accident insurance products. Insurance companies built and used a mortality table that was modified from the national mortality table instead of using the Japanese mortality table.

- 1980s: Savings Product with Variable Interest Rate Sale

With economic development, customers were worried about inflation and they did not want to buy long term insurance products. Insurance companies developed savings and education products where payment amounts were adjusted according to the rate of inflation. Also, they developed the insurance products where the interest rate was related to bank interest rates.

- 1990s: Protection Product Promotion

Non-participation products were introduced with cheap premiums and they came to dominate all the insurance markets because of their competitive price. Although participation products are better for risk management, because the dividend rate to shareholders was 10% and insurance companies competed fiercely, no insurance companies wanted to sell participation products.

There were many huge accidents in Korea in the 1990s and customers became anxious about the future. As the needs of the customers coincided with the supply of insurance companies, more insurance products covering accidents were sold. In addition, as customers' interest in health increased according to the rise in income and medical technology development, cancer products became popular.

In 1997, the economic crisis caused interest rates to change rapidly and a lot of insurance products were cancelled. Insurance companies had to sell high interest rate products to overcome liquidity crisis. Later, these products came back to insurance companies with huge negative interest margins, causing phenomenal problems for many insurance companies.

Authorities liberalized the expected interest rate (1994), which was an important factor in product development, and gradually liberalized other factors in order to make insurance companies accountable for management.

The first mortality table was developed with actual data from insurance companies.

Table 3-2 ●● Process of Liberalization in Premium Pricing

	1994. 4	1995. 4	1997. 4	1998. 4	2000. 4
Expected Mortality			○		
Expected Interest Rate				★	○
Expected Expense Rate					○
Initial Expenses					○
Collection Expenses	○'81)				
Maintaining Expenses	○				

○: Liberalization , ★: Adopting range of tariff

- 2000s: Investment Product Promotion

As the financial market matured, complicated financial products like variable products were introduced. In the 2000s, the interest rate came down and customers looked for higher return products. Following this market trend, insurance companies began to sell variable insurance products with high risk and high return. Now, variable products with an investment feature have become one of the main products for insurance companies.

Also "Critical Illness" products - a mix of health and life insurance - were introduced and cover both critical disease and death.

4.1.3. Government/Public Organization Related Insurance

The main responsibilities for insurance regulation have shifted from the Ministry of Finance and Economy (MOFE) to the Financial Supervisory Committee (FSC). Until 1997, the regulatory authorities were MOFE and the Insurance Supervisory Board, which conducted routine supervision for the insurance industry. However, the responsibilities of MOFE have been reduced to establishing and modifying insurance policies and related laws. The Insurance Supervisory Board merged into the Financial Supervisory Service (FSS). FSS, as an executive arm of FSC, is split into three divisions −insurance correspondence, banking, and securities industries.

- Ministry of Finance and Economy (MOFE)

The MOFE is responsible for policies. It is in charge of establishing and modifying insurance policies and related laws.

- Financial Supervisory Committee (FSC)

The responsibilities of the FSC in relation to insurance include enacting and amending regulations that concern the supervision of insurance companies, authorizing the operation of insurance institutions, and inspecting and sanctioning insurance institutions.

- Financial Supervisory Service (FSS)

The FSS is responsible for supervision. The major functions of the FSS are supporting FSC's regulatory functions, inspecting the operations and financial status of insurance institutions, as well as arbitrating insurance related conflicts. There are departments in FSS related to insurance for accomplishing such functions as follows:

● Insurance Supervision Department

▶ Insurance Supervision Team

- Manages matters related to prudent management, authorization and overall operation of insurance companies
- Responsible for planning and adopting corrective action standards promptly and restructuring insurance companies

▶ Management Guidance Team

- Sets and manages solvency margin ratio standards for insurance companies

▶ Organization Business Supervision Team

- Manages matters related to insurance solicitation and actuarial business
- Supervises the business practices and operations of domestic branches of foreign insurance companies
- Manages matters related to establishment of the overall policy for cross-border insurers
- Supervises and provides guidance on the establishment of the overall policy for cross-border operations and advertisements

▶ Special Insurance Team

- Manages matters related to the prudent management of auto-insurance, re-insurance, and fidelity surety insurance

– Sets and implements risk management and premium rate regulations

▶ Risk Management Team

– Manages matters related to risk measure and risk management

▶ Insurance Actuary[10] Team

– Manages matters related to the authorization of insurance products
– Manages matters related to the premium rate for insurance products

● Insurance Examination Department

▶ Examination Planning Team
▶ Insurance Examination Team 1 ~ 6

- Korea Insurance Development Institute (KIDI)

KIDI was established to protect the interests of insurance companies, the insured and related organizations by managing and applying insurance information, as well as investigating reasonable insurance rate making, and by developing insurance products. The divisions in KIDI related to life insurance for accomplishing such functions are as follows:

▶ Life Insurance Division

– Construct mortality / morbidity rates and analyze life insurance products
– Create and offer actual life tables and reference tables
– Analyze profit-loss forecasts
– Research retirement pension and actuarial systems

▶ Information Center

– Develop and operate business system that reflects special quality of insurance lines
– Accumulate raw insurance data to produce statistical materials
– Maintain Shared Information System and Information Transmission System

10 _ An actuary is one who calculates insurance risks and premiums. An actuary also computes the probability of the occurrence of various contingencies of human life, such as birth, marriage,sickness, unemployment, accidents, retirement, and death.

– Provide information on compulsory automobile liability insurance
– Maintain website

▶ Insurance Research Center

– Research management strategies, marketing methods, asset management, and financial soundness
– Host international conferences, workshops, and academic seminars
– Run insurance library for collecting, arranging, and updating insurance-related publications

- Korea Life Insurance Association (KLIA)

KLIA's main functions include proposing policies and systems related to life insurance to the government, enlightening it on relevant statutes such as the Insurance Business Law and offering suggestions for amendments. It also studies solicitor systems and seeks ways to improve them, engages in advertising and public relations for the industry to give counsel to consumers, and supports member companies in other such ways. These functions are described in greater detail below:

▶ Improve insurance systems and regulations for member companies

– Support and improve life insurance policies and systems
– Research existing insurance laws and statutes and offer suggestions for revising them
– Investigate short and long-term tasks for developing life insurance industry
– Provide information related to domestic and foreign insurance and financial markets

▶ Carry out functions related to life insurance solicitors

– Run qualification tests for life insurance solicitors and register solicitors
– Support training for solicitors and make questions on the solicitor license test
– Operate self-regulatory activities to maintain market discipline
– Investigate and punish irregularities in soliciting activities

▶ Protect life insurance consumers

– Operate "Insurance Contract Inquiry System (ICIS)" for checking on insurance subscriptions and policies
– Handle insurance complaints and offer consumer guidance
– Operate a policy information exchange system for preventing adverse policy selections

– Publish and disclose life insurers' business information

- Korean Actuarial Association (KAA)

The KAA is an educational research and professional organization dedicated to serving the public and society members. It is committed to providing basic education in the fundamental principles of actuarial science, advanced education and professional development, and continuing education for practicing actuaries. Also, the KAA is conducting research to answer questions from government and financial authorities.

- Korean Insurance Institute (KII)

The KII provides insurance company staffs, customers, and people who are interested in insurance with expertise about insurance. Main activities of the KII are training insurance company staffs, educating insurance experts, publishing insurance books, and developing education programs, etc. The KII also provides cyber education in order to educate more people.

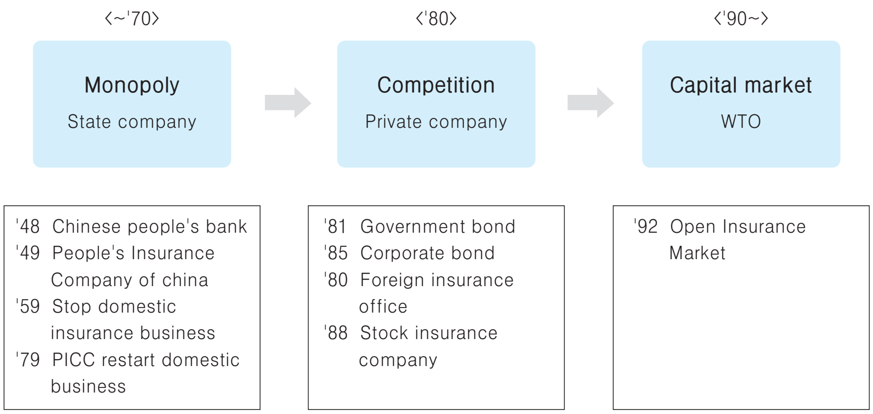
4.2. China

4.2.1. Insurance Industry Development

After the founding of the People's Republic of China by the Chinese Communist Party in 1949, the insurance industry was nationalized with the establishment of the People's Insurance Company of China (PICC). Until 1978, the Chinese financial industry system was a monopoly banking system controlled by People's Bank of China (PBOC). China began its reform program in 1978, gradually introducing market-oriented reforms to a communist centrally planned economy.

In 1984, the State Council separated the state-run PICC from the PBOC. Between 1984 and 1998,smaller state-owned insurance companies were established to create a more competitive insurance market, the largest of which were Ping An Insurance Company (established in 1988) and China Pacific Insurance Company (established in 1991). In October 1998, following the introduction of restrictions on insurance companies against conducting both property and life insurance, the PICC was disbanded, and its three subsidiaries - China Life Insurance Company, China Property Insurance, and China Reinsurance Company - have become independent insurers. In the 1990s, China further developed the insurance market by permitting the establishment of non state-owned domestic insurance companies.

Figure 3-4 ●● Insurance development in China



In 1992, China began to allow limited access to foreign insurers and approved the entry of American International Group (AIG) as the first foreign insurer to conduct insurance business in China. Tokyo Marine and Fire Insurance and Winterthur Swiss Insurance followed suit in 1994 and 1996, respectively, as the second and third foreign insurers in China. The limited opening of the insurance market to selected foreign insurance companies was seen by the Chinese government as "the Shanghai experiment." To protect domestic insurers, geographic limitations were placed on foreign insurers as well as restrictions on their scope of business.

Throughout the 1990s, the insurance market grew rapidly, notably from a small basis. As of 1989, the total gross written premiums were US$1.2 billion. By 2000, the figure had increased to US$20 billion, which was more than 15 times the gross written premiums underwritten in 1989. An interesting observation is the distribution of premiums in the market, which has changed from being dominated by non-life in the early years to now being dominated by life. In the early 1990s, the proportion of non-life to life was almost 2:1. Ten years later, the market proportions of non-life and life has shifted to the opposite−1:2−similar to that in developed countries.

4.2.2. Regulatory Environment

The China Insurance Regulatory Commission (CIRC) is the supervisory body of the insurance industry. The CIRC is an independent commission subordinate to the State Council and was established in 1998 to take over the regulatory duties of the Insurance division of the

PBOC. The staff for the CIRC came largely from the PICC. The headquarters of the CIRC are in Beijing, and CIRC is represented throughout China by branch offices.

Several insurance regulations have been issued in recent years, with a major regulatory framework for the insurance industry being codified in the "Insurance Law of the People's Republic of China," which came into effect on October 1, 1995. The Insurance Law includes provisions relating to capital requirements, approval requirements for opening of new offices, approval requirements for products and pricing, restrictions on the investment of company funds, and restrictions on dealing in or the holding of foreign currency. Since CIRC took over supervision of the insurance market in 1998 from the PBOC, the supervision and control of the insurance market has intensified and strengthened.

4.2.3. Life Insurance Market

- Structure

Most of the domestic insurers are authorized as national insurers who can conduct business on a nationwide basis. However, the foreign insurers are all subject to geographical limitations. All foreign branches are mainly confined to Shanghai, with the exception of AIG, which also has branches in other Chinese cities, Guangzhou, Shenzhen, and Foshan for example. Two foreign insurers are licensed to operate in Guangzhou. The combined share of the top three companies in 2000 was 96 percent (China Life, Ping An, and China Pacific). The remaining share is distributed among the other domestic companies and the foreign branches. In 2000, the foreign share was 1.85 percent on a national basis.

- Major Lines of Business.

In 1999, out of a total premium of US$10.4m, the premium revenues were split approximately one-third to group insurance and two-thirds to individual insurance. Foreign insurers are not permitted to sell group life insurance. Insurance related savings-type products dominate the Chinese market. In 2000, savings component accounted for more than 80 percent of the total life market, while the risk component accounted for less than 20 percent. In 1999 and 2000, all of the major life companies introduced investment linked and dividend products, and such products gained increased recognition in the market.

Asia's traditionally high savings rates have fueled the growth of the life insurance business as evident in the high savings content of life insurance premiums. China is certainly no exception to this fact as it has one of the highest savings rates in the region at more than 40 percent (gross domestic savings rates as share of GDP). The high savings rate, together with the absence of an adequate social security system, is likely to encourage strong growth for the life insurance industry.

Table 3-3 ●● Development of Chinese insurance industry

	Step 1	Step 2	Step 3	Step 4	Step 5
	Before '94	'95~'97	'98~'00	'01~'02	After '03
Issue	- 3 insruance companies:PICC, Pacific, 平安 - Mainly Group insurance - Very few Private insurance	- 3 companies adopt distribution channel - Biz performance increased rapidly	- Assumed interest rate down 3times(7.5→6.5→5.0→2.5%) - Growth moderate of life insurance	- New companies established - High sales rate of Variable/Universal/ Par Products - Rapid growth of Banca	- Sales down due to strengthen qualification of agents - strong competition b/c of life insruance market open

- Interest Rate

The interest rate in China has changed so rapidly that many Chinese insurance companies have had a serious financial problem. Since 1996, the People's Bank of China dropped the interest rate continuously and the savings rate changed from 9.19 % in May 1996 to 1.98% in Feb 2002. It affected the assumed interest rate of insurance companies immediately and also made insurance companies change product types from savings products to protection, investment and universal products.

Table 3-4 ●● Trend in Interest Rates in China

Year	'96.5	'96.8	'97.10	'98.3	'98.7	'98.12	'99.6	'02.2
Interset rate of saving	9.19	7.47	5.67	5.22	4.77	3.78	2.25	1.98
Year	Before Dec 97			Dec 97		Aug '98	Jun '99	
Assumed Interest rate	7.5%(9% Before '95)			6.5%		5%	below 2.5% (Par 2.0, Non-par 2.5)	

Many Chinese insurance companies had negative interest margins because of absence of risk management and rapid interest rate change. Most of the domestic insurance companies in China did not have principles for investment asset management or sufficient ALM skills. They did not have a system for risk management at the level of enterprise and it follows that more than 80%

of them had problems with solvency and financial soundness.

- Distribution.

With AIG's entry into the Chinese life insurance market in 1992 came the introduction of the agency system to the market. Insurance agents now handle almost all business. In recent years, alternative distribution channels have developed. Banks and post offices now play the role of distributors of life insurance. All of the large Chinese life companies, as well as some of the foreign companies, have attempted to distribute insurance products through banks, with the bank acting as the agent.

- Competition.

Competition is keen and in Shanghai there are now six domestic insurers and seven foreign insurers competing in a relatively small market (Shanghaiannual premium US$1.7bn). There is certainly a drive to secure market share and profit margins are getting lower. In addition, the investment environment is not particularly favorable for a life insurer as there remain many restrictions on investment policy. However, in light of the WTO and further relaxation of restrictions, the market has enormous potential for growth in the long term.

- Actuary System

Before 1999, there were actuaries in China who took and passed the SOA (Society of Actuary) exams because the SOA examination center was established on the Nankai Campus in China in 1992. The SOA is the organization of Actuaries in the United States. But Chinese students taking the SOA examinations had to pay both the registration and examination fees in U.S. dollars. The amount of these fees was too much for the students and it was inaccessible to these students in China. This dilemma has been resolved through private international assistance. Some foreign insurance companies paid the exam fees for the students.

In 1999, China started its own actuary system. The first actuary exam was given with exam subjects including insurance law, accounts, and actuarial mathematics.

- Mortality Table

At the beginning of the life insurance industry, China adopted the Japanese mortality tables, the second and third mortality tables in Japan. Later, Chinese authorities collected actual data for 1990 ~ 1993 from insurance companies and developed a Chinese mortality table that was used for 1996 ~ 2005. Since 2006, Chinese insurance companies have been using a new mortality table based on experiential data for 2000 ~ 2003.

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- Profit and Incomplete Sales

The Chinese insurance market has a structure to make profit easily. The expected mortality table has a 20% safety margin, which means the mortality margin is high. In Korea, the safety margin for the expected mortality table is just about 10 ~ 15%. In the case of par-product, 70% of the margin goes to dividends and 30% of the margin belongs to the company, whereas Korean par-products give only 10% to the company, which means that 90% of the margin goes to the policyholders.

Incomplete sales prevailed in the Chinese insurance market because Chinese insurance companies pushed agents to expand sales. Insufficient explanations and exaggerated advertisements about insurance products caused constant complaints from customers. Especially, the exaggerated advertisements for refund rates for investment products and par-products were very common. It is very important to know the "Relationship (關係)"in Chinese society in order to understand such incomplete sales in China. Insurance product sales were accomplished through the relationship between the agent and the customer without really considering the needs of the customer. That is why many customers cancelled insurance policies right after contracting for insurance.

4.3. Vietnam

4.3.1. Overview

Before 1994, there was only one state-owned non-life insurance company in Vietnam, called Baoviet. After 1994, many domestic non-life insurance companies were established in order to prepare for an open market. In 1996, the first non-life Joint-Venture (Baoviet + Tokyo Marine) was established and the first life insurance company, Baoviet Life, was established as a state-owned company. From 1999 to 2004, foreign life insurance companies were established and life and non-life insurance companies with 100% foreign capital like Allianz were established in 1999.

The total premium of the Vietnamese insurance industry increased rapidly from US$116 million (US$13 million in life insurance) in 1998 to US$491 million (US$300 million in life insurance) in 2002.

4.3.2. Products in Life Insurance

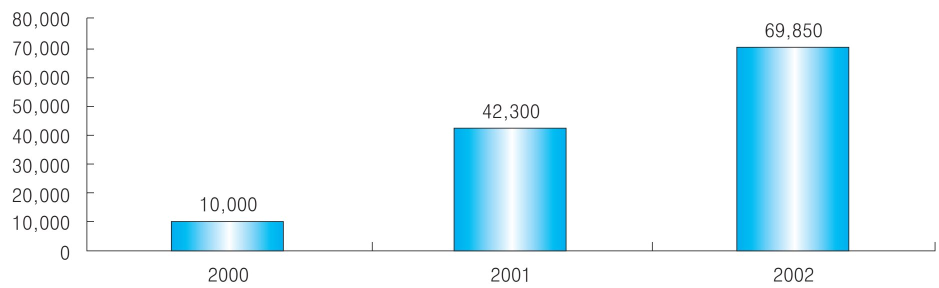
Term products that were automatically renewable with 1 year or 5year terms were sold at the beginning. Education products for children were sold a lot and occupied up to 45% of total contracts in the market. Savings products like education and endowment products occupied more than 95 % of total premiums in Vietnam.

Almost all kinds of insurance products were sold in Vietnam in 2005 except investment products because of a lack of financial system. Markets for annuity products and protection products related to health are expected to be developed in the future.

4.3.3. Distribution Channel

The distribution channel in Vietnam depends absolutely on agents. The number of agents in Vietnam increased sharply from 10,000 in 2000 to 69,850 in 2002.Then they occupied more than 80% of the workforce in the insurance industry. They have played an important role in introducing life insurance in Vietnamese society but incomplete sales and illegal sales have occurred increasingly because there is no qualification system for agents.

Figure 3-5 ●● Number of Agents in Vietnam



4.4. Summary

We can find some considerable points from Korea, China, and Vietnam. They are interest rate, distribution channel, incomplete sales, and mortality table. Although interest rates were changing continuously and the durations of the policies were long, many insurance companies sold products with fixed interest rates, which caused a serious financial problem for the companies. Because insurance products are long-term, the insurance company has to be careful with the interest rate. In the future, the Cambodian economy will develop and the interest rate will definitely increase. At that time, if insurance products with high interest rates are sold, then they will come back to the insurance company as a serious problem when the interest rate is low. Therefore, the Cambodian insurance industry needs to develop insurance products with variable interest rates and not fixed interest rates, like other countries that developed variable interest rate products after negative interest margin problems.

Agents introduced life insurance to people who were not familiar with life insurance in Korea, China, and Vietnam at the beginning. Although they sold insurance products by using their relationships with friends and family, they contributed to developing the life insurance industry in each country. Therefore, the Cambodian authorities need to adopt such an agent system.

However, because agents sold products through their relationships and insurance companies gave attention only to sales, incomplete sales caused problems and resulted in loss of customers' confidence. Education and supervision of incomplete sales are required for continuous growth.

At the beginning of the life insurance industry, it was a general trend to adopt another country's mortality table because there were no actual experiential data. But since then, they have accumulated their own data for developing their own mortality tables. Therefore, Cambodia also has to adopt another country's mortality table and gradually accumulate data.

5. Suggestions for Life Insurance Development in Cambodia

The Cambodian government would like to introduce life insurance to Cambodian society. The Cambodian government already signed an MOU with other foreign insurance companies to establish a joint-venture life insurance company soon. Also, they made a sub-decree for life insurance. It seems that everything is in process for introducing life insurance.

However, we have looked at the obstacles like changing interest rates, inflation, financial market, unfamiliarity and actuarial data, which the Cambodian life insurance industry may face sooner or later. We also looked at what happened at China, Korea, and Vietnam when they introduced and developed life insurance.

From this knowledge, we can imagine easily what kind of problems the Cambodian life insurance company and authority may have. The main obstacles in introducing and developing life insurance in Cambodia can be described as follows; what to sell, how to sell, and how to supervise. We give some suggestions here for overcoming such obstacles that authorities and Cambodian life insurance companies may face.

5.1. Mortality Table[11]

We realize that a mortality table is a key factor in developing the life insurance industry. Since Cambodia is introducing life insurance for the first time, there is no such data and it is hard for Cambodia to build its own mortality table. The available data in Cambodia now are national statistics[12] for life expectancy. Life expectancy for males is 60 years and life expectancy for females is 65 years. A mortality table can not be made with just life expectancy data. Usually, a mortality table is built from death rates of age groups, applying graduation methods. It is impossible to build a mortality table with only life expectancy data, though the most advanced methods are used. Hence, Cambodia needs to adopt another country's mortality table just as Korea and China used Japanese mortality tables in the beginning.

Because the only data we have are life expectancies, we have to compare other country's life expectancies, which can be calculated from their mortality tables to decide which country's mortality table is suitable for Cambodia.

11 _ Korean mortality table is attached as a reference.
12 _ National Health Statistics, Department of Planning and Health Information 2005

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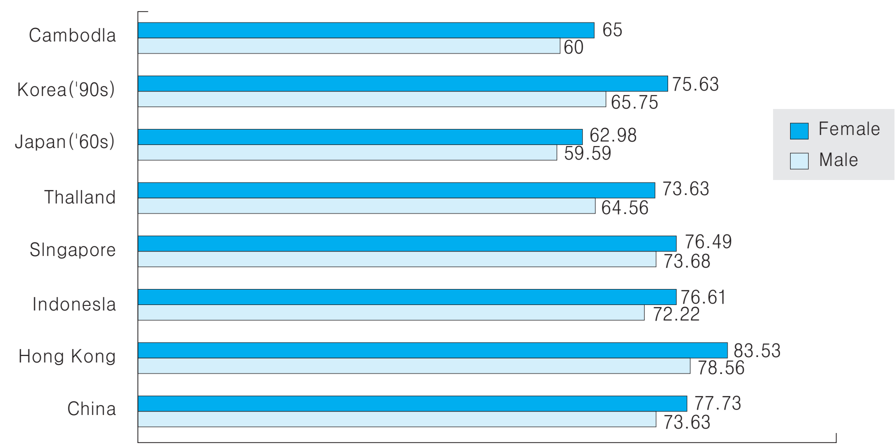
Generally, the mortality table from life insurance is lower than the mortality table from national statistics because of the selection effect. Therefore, we can easily guess that the life expectancy that we have now may be lower than the life expectancy from the mortality table if we have a mortality table. Furthermore, the structure of the Cambodian population is very young because more than 50% of the population is younger than 20 years old. It means that the life expectancy will increase rapidly with economic development in the future.

Considering the overall situation in Cambodia, it is recommended to select a country whose life expectancy is longer than Cambodia's by about ten[13] years[14]

It is absolutely necessary to accumulate experiential data to develop Cambodia's own mortality table. Also, mortality development experts need to be educated and trained.

Figure 3-6 ●● Life Expectancies of other countries



13 _ Ten years is not calculated by statistical or actuarial analysis. In respect to risk management, we need to be conservative and ten years may be enough to cover variation in mortality.
14 _ If we have more information about death rates in Cambodia, we can make a more confident decision in selecting another country for adopting a mortality table.

5.2. Product Sales

Since Cambodia recently achieved economic growth and improved its standard of living, people may be more able to buy insurance products. But the level of economic development in Cambodia is still low and it is believed that customers will not buy insurance products on their own. They will save money or buy some other products now instead of buying insurance products for a future uncertainty. Also, life insurance is not very familiar to people in Cambodia even though non-life insurance companies exist. Therefore, in order to sell life insurance products, compulsory group insurance is recommended for companies, NGOs, and other groups in which employees receive salaries regularly. Through compulsory group insurance, the policyholder may have a chance to learn what life insurance is. The problem of people not willing to buy insurance products can be solved and premiums can be collected easily from companies but not from individuals. However, tax benefit must be given to reduce the resistance against buying insurance products compulsorily. Also, education about insurance benefits and tax benefits is required for establishing compulsory group insurance.

5.3. Product Development

Savings products with protection are recommended for life insurance. Since savings may be the goal of the household and insurance has to compete with banks, savings products with protection for premature death or disease may be welcomed by households. But since saving is a priority for households, protection coverage has to be a minor part of the product. Therefore, savings products with minimum protection coverage for e.g. car accidents, malaria, diarrhea, and respiratory infections that are the major causes of hospitalization[15] can be sold to customers[16].

According to traditional Asian values, educating children is an important obligation of the household. The breadwinner may sacrifice himself/herself for educating his/her children, which is a traditional Asian value. Hence, parents will save money to educate children, which means that education products are likely to be popular.

There can be many types of education products but the basic concept is that when the parents die before the children reach a certain age, the insurance company provides money for the children to be educated to a certain age. For example, parents need some money for the

15 _ "National statistics 2005", Department of Planning and Health Information
16 _ In developing products, products with maturity refunds should be developed because they can attract more interest from customers.

children when they enter university, but if the parents die before the children enter university, the insurance company will pay the entrance fee and tuition for the children in place of the deceased parents.

Since such education products have both characteristics of savings and protection as well as meeting the traditional Asian values, these products have accomplished huge success in Korea[17].

It is not a good idea to have a fixed interest rate for an insurance product. When we look at other countries such as Korea and China, they suffered serious negative interest margins because they had sold products with fixed interest rates when the interest rate was high. Some companies went into bankruptcy because of this negative interest margin. It means that products have to be designed to follow the change in market interest rate. Especially, interest rate for the savings part in products must not be fixed but variable with market interest rate, and risk from interest rate changes has to be minimized. Therefore, it is recommended to use floating interest rate, not fixed interest rate.

5.4. Distribution Channel

Non-life insurance companies in Cambodia are selling products now with their own staffs. Actually, there is a system of agents and brokers in Cambodia but practically no agents or brokers are working now because of the deposit that they have to pay to the authorities. Non-life insurance companies are using their staffs for sales and they receive salaries regardless of sales.

In Korea, China, and Vietnam, agents contributed to developing the life insurance industry. They advertised insurance and sold the products. The sales of life insurance products have been largely dependent on the agents. Since an agent system employs lots of people, it also brings employment. Therefore, regulations for an agent system must be changed to develop an agent system.

On the other hand, life insurance products require expert knowledge that is not easily understandable and customers are generally dependent on the explanation from agents. Customers are vulnerable to incomplete sales. A supervisory system for the distribution channel is required. Authorities and insurance companies have to work together to reduce incomplete sales by training agents, investigating and punishing irregularities in soliciting activities, etc.

17 _ Especially, Kyobo Life Insurance Company in Korea attainedhuge success in education products because it developed the first such products in the world.

After adopting an agent system, qualifications as well as education for the agent have to be strengthened gradually. Although an agent system is necessary to develop life insurance, supervision for consumer protection is needed after developing life insurance.

5.5. Consumer Protection

Consumers have to be protected from insurance companies. The insurance industry is based on confidence of consumers and it is hard to develop the insurance industry without confidence from consumers.

The consumer himself/herself is too weak to fight against an insurance company when there are conflicts about incomplete sales, claim treatment, etc. Authorities need to have a division to handle claims from consumers. With such a division, authorities may catch hold of what the consumers are thinking and what the claims are, and reflect them in the regulations and supervision.

When laws or regulations are not clear for a certain conflict between consumers and insurance companies, they have to be understandable from the consumers'viewpoint and not that of the insurance companies. Since consumers are relatively weak compared to insurance companies, it should be required by a state law or regulation that the law or regulation has to be understood by consumers in order to protect consumers.

On the other hand, an association of (life) insurance companies needs to make public disclosures about general information and specific information for certain products as well as information about companies like financial soundness. Such information can help consumers buy insurance products.

5.6. Asset Management

When introducing the life insurance industry, the Cambodian government wants to accumulate capital to invest into the bond market because it needs capital for investing in economic development. In order to implement such plans without any problems, it is necessary to develop and activate the bond market. Due to the characteristics of insurance, it is necessary to have long-term investments and the bond market meets such needs of insurance companies. Therefore, in order to introduce and develop the life insurance industry, the bond market has to be introduced and developed together. If the bond market is not working properly, life insurance companies may have problems in investing the premiums that they receive from policyholders and they will look for investment overseas.

Non-life insurance companies working in Cambodia now are asked to keep at least 75% of the reserve in Cambodia. But practically, Cambodian non-life insurance companies are known not to follow this regulation. The reasons why they do not follow the regulation are not comprehended in detail but an insufficient financial market, including the bond market, is believed to be one of the reasons.

The Cambodian government therefore needs stronger efforts to develop the bond market as well as the life insurance industry. In order to attract domestic capital and to develop the bond market, it is necessary to ask life insurance companies to buy domestic bonds compulsorily. But authorities have to have a limit for the investment into the capital markets like stocks, futures, etc. that have high risk for maintaining financial soundness.

On the other hand, life insurance companies may consider entering the micro credit[18] market. Recently, the Cambodian economy has been rapidly growing and there will be many people who want to develop their own business with micro capital. Insurance companies can help such people with a policy loan, which is also a very useful tool for asset management. Hence, business in the micro credit market can help not only the asset management of life insurance companies but also gain credibility from consumers, since many people need small capital for their own business at the beginning stages of economic development. However, excessive policy loans for the micro credit market must be limited.

5.7. Actuary, Research, and Education

One of the key factors in developing the life insurance industry is the adoption of an actuarial system. At the beginning, the level of an actuary exam needs to be a little bit lower to encourage many people to take the exams, and then the level has to be gradually increased to improve the quality of the actuaries. It is important to allow foreign actuaries to work equally in Cambodia because foreign actuaries with special knowledge can improve the level of actuary in Cambodia. It is not necessary to give a certificate of Cambodian actuary to foreign actuaries because there is no mutual approval between Cambodia and other countries.

Right now, there are not any actuaries working in life insurance companies in Cambodia, but life insurance is going to be introduced soon. Korea had a similar problem that Cambodia has now. In Korea, certificates of actuary were given to experts who hadalready worked in actuary or similar departments without exams because there were no actuaries and chief actuaries were

18 _ The definition of micro credit here may be different from one of micro credit by Grameen Bank, founded by Muhammad Yunus, who received the Nobel Prize for peace.

required only at the beginning. Cambodia may consider this idea in adopting an actuary system.

The insurance industry is more complex than other industries and it requires research for some issues like influence of new products, changing laws, etc. Therefore, an independent research center is required for supporting authorities and companies in making policy or developing products. In the USA, the SOA (Society of Actuary) has the research function. In Korea, the Korea Insurance Research Center has the research function.

It is also necessary to have an education center to train and educate actuaries, agents, and people who are or are willing to be in the insurance industry because regular and continuous education can produce experts with special knowledge who can help develop the Cambodian insurance industry. Also, it is necessary to have a public campaign for life insurance. Though non-life insurance companies are now working in Cambodia, life insurance is unfamiliar to common people and this unfamiliarity can be a main obstacle for developing life insurance in Cambodia. Therefore, a public campaign is very important and an education center has to be in charge of a public campaign as well as authority.

However, it seems very hard to establish an association of actuary, independent research center, and education center under the current circumstances in Cambodia. Since there are not many insurance companies and the insurance market is not big enough to support all of them, an integrated center called an Insurance Training Institute[19] that has all the functions mentioned is recommended. We will further discuss the insurance center in the next section.

5.8. Insurance Training Institute

The Cambodian insurance market with one reinsurance company and three non-life insurance companies in business is currently not big enough to establish an association of actuary, independent research center, and education center. For practicality, many people will be expected to work in not just one but also two or three of them when they are established. Therefore, it would be better to establish one institution called an Insurance Training Institute with integrated functions.

The Insurance Training Institute can function as an actuary association and research, education and training centers. It will also take care of issues related to actuaries, including actuary exams, as well as researching various issues with authorities and companies. In

19 _ Recently, the Cambodian government introduced an insurance training institute for training and public education for insurance. We have adopted the same name for our institution.

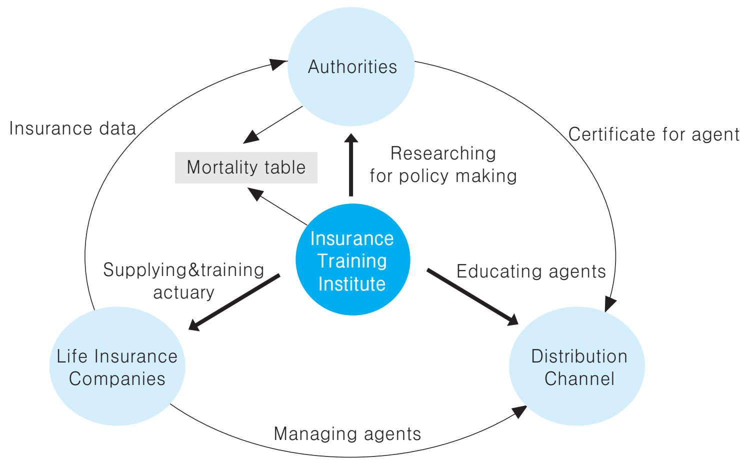
addition, it will play a role in providing authorities and companies with experts who are well-trained. Various courses, preparation programs for actuarial exams, agent training programs, etc. can be offered at the Insurance Training Institute as well.

The picture below explains how the Insurance Training Institute works with authorities, life insurance companies, and a distribution channel. The Insurance Training Institute will work as a kind of think tank for authorities by doing research for policy making. In addition, authorities can get some advice from the Insurance Training Institute when they want to know affects and influences before introducing new policies or new products. The Insurance Training Institute can also provide new ideas or new research results about various issues related to the insurance industry. The Insurance Training Institute will train actuaries for companies to follow up on new professional knowledge. It will be in charge of the actuary system and it will supply companies and authorities with actuaries. The distribution channel will be managed by life insurance companies, but agents in the distribution channel will be educated at the Insurance Training Institute. The Insurance Training Institute can provide education to agents for reducing incomplete sales. After getting educated at the Insurance Training Institute, agents may get certified by authorities after passing qualification exams. The authorities will receive insurance experiential data from life insurance companies and will work with the Insurance Training Institute to develop a mortality table. Therefore, the Insurance Training Institute will have to do research on the mortality table and nurture experts on mortality and morbidity rate before developing a mortality table. By analyzing and studying experiential data, the Insurance Training Institute will have to produce statistics about the insurance industry as well as various mortality and morbidity tables. It may help life insurance companies develop more complicated products with such tables and understand what consumers need.

It is very important for life insurance companies to collect experiential data in a fixed format and submit the data without mistakes or errors. But generally, there are always mistakes and errors and the Insurance Training Institute has to have the skills to find out whether the data is correct or not. With mistakes or errors, the mortality and morbidity tables will be very different from actual values, causing incorrect premiums for products, meaning customers pay more premiums or life insurance companies will have more claims. To reduce errors, it is important to educate those working in the department of claim treatment because they will put the information about claims into the computer system. Therefore, life insurance companies have to train their staffs and develop a computer system that can reduce human error or mistakes. Authorities along with life insurance companies also have to study what kind of data is needed.

The authorities and companies need to work in coordination to run the Insurance Training Institute smoothly. People from the authorities, companies, and universities involved with the Insurance Training Institute as part-timers or full-time employees must work objectively. It is not a good idea for the Insurance Training Institute to have any kind of association with insurance companies, either. Because the association of insurance companies speaks for the benefit of the insurance companies, it cannot be compatible with the Insurance Training Institute, which researches independently. Therefore, an association of life insurance companies has to be established separately.

Figure 3-7 ●● Functions of Insurance Training Institute



5.9. Legal Frame

Insurance is generally divided into life and non-life insurance[20]. But according to the Insurance Law, insurance in Cambodia is divided into individual and property insurance. Individual insurance includes life insurance, health insurance, and physical insurance. It implies that life, health, and physical insurance seem to be different. However, according to the sub-decree on life insurance[21], life insurance covers bodily injury, disability and sickness, as well as death. So, it is not clear exactly what life insurance is and what it covers. It is especially ambiguous where health insurance belongs. Some non-life insurance companies working in Cambodia are now selling health insurance products[22]. Therefore, it is necessary to clarify

20 _ Sometimes called property and loss insurance.
21 _ Nomura Institute is working on it.
22 _ I saw a poster for sale of health products and it is illegal, the MEF said.

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definitions of life and accident as well as health.

On the other hand, the operation of life and non-life insurance business is not definitely separated. According to the sub-decree on life insurance, an insurance company can operate life and non-life insurance businesses if the MEF allows it. The separation of life and non-life insurance business is required for protecting one activity from another activity in the event of a financial problem. This is why such separation is an international practice. Therefore, it is recommended not to permit the operation of both life and non-life business in one company at the same time.

In the sub-decree on life insurance, there are some exceptions for life insurance in licensing term, licensing agents and brokers, and investment restrictions that are regulated by a higher law. As a result, only non-life insurance companies or agents are obligated to follow the law and it may seem discriminatory. Consequently, it can cause different developments between the life and non-life insurance industries. Therefore, it is recommended to change the higher law or sub-decree on life insurance for balanced development.

In order to develop Cambodia's own mortality table, it is necessary to accumulate experiential data from insurance companies. All insurance companies have to submit experiential data to the MEF and the MEF has to analyze these data with experts from the insurance center to develop a mortality table. However, insurance companies are asked by law to submit only statistical reports and not experiential data. Therefore, it is necessary to amend this law and ask insurance companies to submit experiential data as well as the statistical reports.

It will be better to make a guideline for dividends to accumulate capital. The dividend policy for accumulating capital will induce life insurance companies to sell more participation products. The dividend rate of participation products can be decided by considering economic circumstances and the insurance market[23]. Participation products are better in terms of risk management because they have a bigger risk buffer than non-participation products, which is very useful when the interest rate is lower or the claim rate is higher than expected. Therefore, the MEF needs to issue dividend guidelines to accumulate capital.

5.10. Micro-Insurance

The current level of the Cambodian economy may not allow common people to pay high

23 _ Dividend for shareholders is 10% in Korea and 30% in China.

premiums for insurance products. Consumers would rather pay lower premiums for insurance products. Therefore, it is very important to provide customers with insurance products with low premiums. Recently, micro insurance has been discussed more often but there is no exact definition of micro insurance. Generally, it is known as insurance with a low premium provided to poor people. However, Cambodia is at the infancy stage of introducing life insurance and at a low economic level; it is hard to discuss supplying insurance products with low premiums to poor people. It may be more important to consider providing common people with regular insurance products with low premiums.

One method to provide products with low premiums is to develop insurance products by utilizing facilities that already exist. In other countries, the post office, with its own national network already established, is an efficient way to reach rural and isolated areas to promote insurance products[24]. However, the post office in Cambodia is known to lack credibility in society and it is not a good idea to sell insurance products at the post office because insurance is based on credibility with customers.

The Bank of Acleda is known as the only organization that has a national network in Cambodia. But, because this bank is a private one, there is a limit in providing products with low premiums. When the life insurance industry matures, insurance products with low premiums can be provided using bank facilities such as bancassurance. Bancassurance is one of the distribution channels insurance companies can use to provide low premium products because bank facilities can be used and insurance companies can reduce costs.

Insurance products will be mainly sold in urban areas. Since there is need for insurance products in rural and isolated areas, the Cambodian government needs to reorganize the post office or use another national organization to sell insurance products in the future.

5.11. Road Map

We can visualize developing the life insurance industry in these three steps.

In step one, savings products with minor protection coverage and education products should be sold as compulsory group insurance, if necessary. To develop such products, a foreign mortality table should be used in the beginning, but when enough experiential data is accumulated to develop Cambodia's own mortality table in the future, it should be replaced. An

24 _ In Korea, there is a higher limit on policy amount in order to prevent competition with general insurance companies.

actuarial system has to be introduced and an insurance center has to be established for research and education. One important thing is to amend the law in order to activate an agent system in addition to the law for asset management. If possible, micro insurance needs to be introduced to supply customers with lower premium products

In step two, the MEF and the insurance center has to develop their own mortality tables with accumulated data and expertise from step 1. While developing various morbidity rates as well as mortality rates, protection products like whole life and health products can be developed and sold. The qualifications of the actuary and agents have to be strengthened, depending on the development of the market. Also, education about incomplete sales has to be reinforced to the agents. The authorities must tighten supervision of incomplete sales. In addition, they have to tighten supervision of risk management for financial soundness as well as amend regulations and laws for asset management to follow up on the changes in the market environment. The government has to consider selling insurance products by using a national network such as the post office to supply products with low premiums.

	Step1	Step2	Step3
Products	- Compulsory Group Products - Savings Products - Education Products	- Protection Products	- Annuity - Variable
Mortality	- Adopt mortality table from another country - Accumulate data	- Develop own mortality table - Develop morbidity table	
(1) Insurance *a. Tranning* **Institute**	- Actuary System - Research Function - Education Function	- Revise actuary qualification - Strengthen agents' education for incomplete sales	- Research Center for education
Distribution Channel	- Edit Agent System	- Strengthen agents' qualification - Supervise incomplete sales	- Bank assurance
Legal Frame	- Restrict asset management - Introduce micro insurance	- Supervise risk Management - Revise regulations on asset management - Edit micro insurance	- Revise solvency system - Privatize micro insurance

In step three, annuity products and investment products like variable products should be introduced. If necessary, the education function at the insurance center can be separated to become an independent education center. This education center may give not only insurance knowledge but also financial knowledge to prepare for an advanced financial society. If this education center provides financial programs of excellent quality, then this education center can be the center for finance in South East Asia because Cambodia is strategically located in the center of South East Asia. The authority should also consider introducing bancassurance for diversifying the distribution channel and supplying cheap products. It is necessary to revise the supervisory system for financial soundness to keep up with the change in market environment. It may be necessary to privatize institutions like the post office, which can sell insurance products by using its national network as mentioned in step one.

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6. Conclusion

The Cambodian government would like to introduce a life insurance industry to accumulate capital for investment into economic development and providing the benefit of insurance to its people. Non-life insurance companies already exist in Cambodia and they will help people to know and understand what insurance is. However, life insurance is still relatively unfamiliar to people and it ishard to sell insurance products to people because the economic level is low in Cambodia. The question is, "What products can be sold and how to sell such products under these circumstances?" These are the main issues Cambodia is facing in introducing life insurance. We suggest compulsory group insurance as a solution. Life insurance products should be sold compulsorily through strong government leadership. To reduce the resistance to compulsory sale, a tax concession and the benefits of life insurance products must be highlighted. It would be prudent to advertise that a savings product with a life insurer is better than a savings product in a bank because a savings product with a life insurer includes minor protection against accident or disease as well. An agent system must be adopted in order to introduce life insurance and to sell products. At the beginning, there may not be enough people or experts to establish several institutions for the life insurance industry, so initially an insurance center is recommended. It can serve all the necessary needs until the market is ready.

Reviewing the history or development of the life insurance industry in other countries, we find that there is a special relationship between interest rate change and financial problems. When the economy develops, the interest rate generally increases. At that time, insurance companies sell products with high fixed interest rates. But when the interest rate goes back down, insurance companies have serious financial problems. Therefore, the Cambodian government has to be very careful with interest rate change and pay more attention to risk management as mentioned in step two.

Although the three step road map was outlined to develop the life insurance industry, the most important thing is strong government leadership. The authorities must ask insurance companies to follow the law and policies. The government must show a transparent and consistent policy that consumers and insurance companies can count on. Since the insurance industry is based on credibility, if the government loses credibility with consumers and insurance companies concerning government policies, consumers cannot give credibility to insurance companies either, resulting in a slowdown in the insurance industry.

Table 3-5 ●● The First Korean Mortality Table

Male

Age	lx	dx	px	qx	ex	Age	lx	dx	px	qx	ex
0	100,000	1,264	0.98736	0.01264	65.75	51	86,113	1,027	0.98807	0.01193	19.95
1	98,736	176	0.99822	0.00178	65.59	52	85,086	1,113	0.98692	0.01308	19.18
2	98,560	147	0.99851	0.00149	64.70	53	83,973	1,204	0.98566	0.01434	18.43
3	98,413	121	0.99877	0.00123	63.80	54	82,769	1,301	0.98428	0.01572	17.69
4	98,292	101	0.99897	0.00103	62.88	55	81,468	1,404	0.98277	0.01723	16.96
5	98,191	87	0.99911	0.00089	61.94	56	80,064	1,512	0.98111	0.01889	16.25
6	98,104	78	0.99920	0.0008	61.00	57	78,551	1,627	0.97929	0.02071	15.56
7	98,025	70	0.99929	0.00071	60.04	58	76,925	1,745	0.97731	0.02269	14.87
8	97,956	62	0.99937	0.00063	59.09	59	75,179	1,870	0.97513	0.02487	14.21
9	97,894	58	0.99941	0.00059	58.12	60	73,310	1,998	0.97275	0.02725	13.56
10	97,836	56	0.99943	0.00057	57.16	61	71,312	2,129	0.97014	0.02986	12.92
11	97,780	55	0.99944	0.00056	56.19	62	69,182	2,263	0.96729	0.03271	12.31
12	97,726	56	0.99943	0.00057	55.22	63	66,920	2,398	0.96417	0.03583	11.71
13	97,670	60	0.99939	0.00061	54.25	64	64,522	2,532	0.96076	0.03924	11.12
14	97,610	66	0.99932	0.00068	53.28	65	61,990	2,664	0.95703	0.04297	10.56
15	97,544	75	0.99923	0.00077	52.32	66	59,326	2,791	0.95296	0.04704	10.01
16	97,469	86	0.99912	0.00088	51.36	67	56,536	2,911	0.94851	0.05149	9.48
17	97,383	97	0.99900	0.001	50.41	68	53,625	3,021	0.94366	0.05634	8.96
18	97,286	110	0.99887	0.00113	49.46	69	50,603	3,119	0.93836	0.06164	8.47
19	97,176	122	0.99874	0.00126	48.51	70	47,484	3,201	0.93258	0.06742	7.99
20	97,053	134	0.99862	0.00138	47.57	71	44,283	3,265	0.92628	0.07372	7.53
21	96,919	143	0.99852	0.00148	46.64	72	41,018	3,305	0.91942	0.08058	7.09
22	96,776	151	0.99844	0.00156	45.70	73	37,713	3,321	0.91195	0.08805	6.67
23	96,625	156	0.99839	0.00161	44.78	74	34,392	3,308	0.90382	0.09618	6.27
24	96,469	159	0.99835	0.00165	43.85	75	31,085	3,264	0.89499	0.10501	5.88
25	96,310	161	0.99833	0.00167	42.92	76	27,820	3,188	0.88540	0.1146	5.51
26	96,149	163	0.99830	0.0017	41.99	77	24,632	3,079	0.87500	0.125	5.16
27	95,986	165	0.99828	0.00172	41.06	78	21,553	2,937	0.86373	0.13627	4.83
28	95,821	169	0.99824	0.00176	40.13	79	18,616	2,764	0.85153	0.14847	4.51

29	95,652	173	0.99819	0.00181	39.20	80	15,852	2,563	0.83834	0.16166	4.21
30	95,479	180	0.99812	0.00188	38.27	81	13,289	2,337	0.82411	0.17589	3.93
31	95,300	186	0.99805	0.00195	37.34	82	10,952	2,094	0.80877	0.19123	3.66
32	95,114	195	0.99795	0.00205	36.41	83	8,858	1,840	0.79227	0.20773	3.40
33	94,919	204	0.99785	0.00215	35.49	84	7,018	1,582	0.77456	0.22544	3.16
34	94,715	217	0.99771	0.00229	34.56	85	5,436	1,329	0.75558	0.24442	2.94
35	94,498	232	0.99755	0.00245	33.64	86	4,107	1,087	0.73530	0.2647	2.73
36	94,266	251	0.99734	0.00266	32.72	87	3,020	865	0.71367	0.28633	2.53
37	94,016	274	0.99709	0.00291	31.81	88	2,155	667	0.69067	0.30933	2.35
38	93,742	302	0.99678	0.00322	30.90	89	1,489	497	0.66629	0.33371	2.18
39	93,440	335	0.99641	0.00359	30.00	90	992	357	0.64053	0.35947	2.02
40	93,105	372	0.99600	0.004	29.10	91	635	246	0.61341	0.38659	1.87
41	92,732	41	5 0.99553	0.00447	28.22	92	390	162	0.58498	0.41502	1.73
42	92,318	462	0.99500	0.005	27.34	93	228	101	0.55531	0.44469	1.60
43	91,856	513	0.99442	0.00558	26.48	94	127	60	0.52448	0.47552	1.48
44	91,344	569	0.99377	0.00623	25.62	95	66	34	0.49262	0.50738	1.37
45	90,775	623	0.99314	0.00686	24.78	96	33	18	0.45989	0.54011	1.26
46	90,152	678	0.99248	0.00752	23.95	97	15	9	0.42648	0.57352	1.15
47	89,474	738	0.99175	0.00825	23.13	98	6	4	0.39261	0.60739	1.03
48	88,736	803	0.99095	0.00905	22.31	99	3	2	0.35853	0.64147	0.86
49	87,933	872	0.99008	0.00992	21.51	100	1	1	0.00000	1	0.50
50	87,060	947	0.98912	0.01088	20.72						

Female

Age	lx	dx	px	qx	ex	Age	lx	dx	px	qx	ex
0	100,000	659	0.99341	0.00659	75.63	55	91,287	641	0.99298	0.00702	24.39
1	99,341	140	0.99859	0.00141	75.13	56	90,647	700	0.99228	0.00772	23.56
2	99,201	115	0.99884	0.00116	74.24	57	89,947	763	0.99152	0.00848	22.74
3	99,086	89	0.99910	0.0009	73.33	58	89,184	830	0.99069	0.00931	21.93
4	98,997	67	0.99932	0.00068	72.39	59	88,354	903	0.98978	0.01022	21.13
5	98,929	55	0.99944	0.00056	71.44	60	87,451	980	0.98879	0.01121	20.34
6	98,874	51	0.99948	0.00052	70.48	61	86,470	1,064	0.98769	0.01231	19.56
7	98,823	49	0.99950	0.0005	69.52	62	85,406	1,154	0.98649	0.01351	18.80
8	98,773	48	0.99951	0.00049	68.56	63	84,252	1,249	0.98517	0.01483	18.05
9	98,725	49	0.99950	0.0005	67.59	64	83,003	1,350	0.98373	0.01627	17.32
10	98,675	52	0.99947	0.00053	66.63	65	81,652	1,457	0.98215	0.01785	16.60
11	98,623	53	0.99946	0.00054	65.66	66	80,195	1,571	0.98041	0.01959	15.89
12	98,570	50	0.99949	0.00051	64.70	67	78,624	1,690	0.97851	0.02149	15.20
13	98,520	43	0.99956	0.00044	63.73	68	76,934	1,814	0.97642	0.02358	14.52
14	98,476	37	0.99962	0.00038	62.76	69	75,120	1,943	0.97413	0.02587	13.86
15	98,439	35	0.99964	0.00036	61.78	70	73,177	2,076	0.97163	0.02837	13.21
16	98,403	37	0.99962	0.00038	60.81	71	71,101	2,212	0.96889	0.03111	12.58
17	98,366	40	0.99959	0.00041	59.83	72	68,889	2,350	0.96589	0.03411	11.97
18	98,326	45	0.99954	0.00046	58.85	73	66,539	2,489	0.96260	0.0374	11.38
19	98,280	51	0.99948	0.00052	57.88	74	64,050	2,626	0.95900	0.041	10.80
20	98,229	58	0.99941	0.00059	56.91	75	61,424	2,760	0.95507	0.04493	10.24
21	98,171	65	0.99934	0.00066	55.94	76	58,664	2,889	0.95076	0.04924	9.70
22	98,107	70	0.99929	0.00071	54.98	77	55,776	3,009	0.94606	0.053949.17	
23	98,037	74	0.99925	0.00075	54.02	78	52,767	3,117	0.94092	0.05908	8.67
24	97,963	75	0.99923	0.00077	53.06	79	49,650	3,212	0.93531	0.06469	8.18
25	97,888	76	0.99922	0.00078	52.10	80	46,438	3,288	0.92919	0.07081	7.71
26	97,812	77	0.99921	0.00079	51.14	81	43,150	3,344	0.92251	0.07749	7.26
27	97,734	79	0.99919	0.00081	50.18	82	39,806	3,374	0.91523	0.08477	6.83
28	97,655	81	0.99917	0.00083	49.22	83	36,432	3,377	0.90730	0.0927	6.41

29	97,574	85	0.99913	0.00087	48.26	84	33,054	3,349	0.89868	0.10132	6.02
30	97,489	89	0.99909	0.00091	47.30	85	29,705	3,288	0.88930	0.1107	5.64
31	97,400	94	0.99904	0.00096	46.34	86	26,417	3,194	0.87911	0.12089	5.28
32	97,307	98	0.99899	0.00101	45.39	87	23,223	3,064	0.86805	0.13195	4.94
33	97,209	102	0.99895	0.00105	44.43	88	20,159	2,901	0.85607	0.14393	4.61
34	97,107	107	0.99890	0.0011	43.48	89	17,258	2,708	0.84311	0.15689	4.30
35	97,000	113	0.99884	0.00116	42.53	90	14,550	2,487	0.82909	0.17091	4.01
36	96,887	120	0.99876	0.00124	41.58	91	12,063	2,244	0.81397	0.18603	3.74
37	96,767	129	0.99867	0.00133	40.63	92	9,819	1,987	0.79768	0.20232	3.48
38	96,638	140	0.99855	0.00145	39.68	93	7,833	1,722	0.78016	0.21984	3.23
39	96,498	153	0.99841	0.00159	38.74	94	6,111	1,458	0.76137	0.23863	3.00
40	96,345	168	0.99826	0.00174	37.80	95	4,652	1,204	0.74126	0.25874	2.78
41	96,177	185	0.99808	0.00192	36.86	96	3,449	966	0.71978	0.28022	2.58
42	95,993	202	0.99790	0.0021	35.93	97	2,482	752	0.69690	0.3031	2.39
43	95,791	220	0.99770	0.0023	35.01	98	1,730	566	0.67262	0.32738	2.22
44	95,571	241	0.99748	0.00252	34.09	99	1,164	411	0.64693	0.35307	2.05
45	95,330	262	0.99725	0.00275	33.17	100	753	286	0.61984	0.38016	1.90
46	95,068	286	0.99699	0.00301	32.26	101	467	191	0.59139	0.40861	1.76
47	94,782	313	0.99670	0.0033	31.36	102	276	121	0.56166	0.43834	1.62
48	94,469	341	0.99639	0.00361	30.46	103	155	73	0.53072	0.46928	1.50
49	94,128	373	0.99604	0.00396	29.57	104	82	41	0.49870	0.5013	1.39
50	93,755	409	0.99564	0.00436	28.68	105	41	22	0.46577	0.53423	1.28
51	93,346	447	0.99521	0.00479	27.81	106	19	11	0.43209	0.56791	1.17
52	92,899	490	0.99473	0.00527	26.94	107	8	5	0.39791	0.60209	1.04
53	92,409	536	0.99420	0.0058	26.08	108	3	2	0.36348	0.63652	0.86
54	91,874	586	0.99362	0.00638	25.23	109	1	1	0.00000	1	0.50