Journal of Economics and Development Vol.13, No.3, December 2011, pp. 5 - 23 ISSN 1859 0020

Public Debt of Vietnam: Risk and Challenges

Pham The Anh
National Economics University, Vietnam
Email: pham.theanh@neu.edu.vn

Abstract

The paper aims to analyse risks and challenges of Vietnam's public debt. The analysis is a combination of statistical description and numerical simulation. It basically shows that the public debt sustainability and liquidity are still below the conventional safety thresholds but the macroeconomic conditions are quickly deteriorating as a result of the recent highly-rising public debt. Given the Vietnamese government's targets, the benchmark scenario implies that Vietnam's public debt to GDP ratio will consistently increase to around 65% in 2015 and then 82% in 2020. Facing increasing risks of high public debt and limited potential revenue sources, the only way for the government to avoid an explosive path of public debt is to reduce public spending seriously and persistently.

Keywords: Public debt, macroeconomic volatility, Vietnam

JEL Classification: E60, E62 and E66

1. Introduction

The Vietnamese economy has probably been experiencing the hardest time since its renovation (*Doi Moi)* started in the early 1990s. The recent global economic crisis has revealed many shortcomings of the economy which had been enjoying high growth regardless of its long term stability. Economic growth slowed down while prices increased dramatically. Furthermore, macroeconomic imbalances such as the trade deficit and public debt continued to increase, threatening the country's sustainable growth and stability.

Vietnam, like many other developing countries, has a high demand for loans in order to implement various socio-economic projects. There are many reasons for policy makers to be tempted by the prospect of vast borrowing programs. The loans may be used to finance public infrastructure to improve the economy's capacity, to invest in health and education to raise human capital and long run growth, or to temporarily loosen fiscal policies in response to a cyclical recession. However, the consequences of the public debt crises that happened in emerging markets during 1990s and in Europe recently are good lessons for the country to be careful with its budgetary decisions.

In this paper, we first attempt to evaluate the current situation of Vietnam's public debt and consequently point out its potential risks. We then discuss the relationship between public debt and other important macroeconomic indicators such as growth and inflation. Finally, we give some predictions of Vietnam's public debt in the next ten years.

2. Data inconsistency

According to the law on public debt management that came into effect on 1st January 2010, Vietnam's public debt is defined as government debt, government guaranteed debt, and municipal debt. The total public debt can also be divided into domestic and external debt. (External debt is the amount of debts in foreign currencies through bilateral or multilateral arrangements, or through international financial markets.) The fiscal situation and the performance of the economy are closely related through a number of vital macroeconomic variables. A prolonged budget deficit will finally result in a high level of internal public debt. Meanwhile, external public debt is mainly caused by the deficiency in national savings. A rapid growth of public debt may limit the effects of monetary, fiscal, and exchange rate policies.

Government budget deficit is defined as the gap between total expenditure and total revenue in a given period. Meanwhile, public debt is computed by accumulating these deficits over many years. Statistics on Vietnam's public debt are very inconsistent. Different sources report different data. In recent years, data from the Ministry of Finance (MoF) of Vietnam showed a surprising similarity between actual and projected figures. In particular, both the actual and projected state budget deficit always fluctuated slightly around 5% of GDP except for 2009 when Vietnam implemented its stimulus package to escape from the economic recession. However, the above figures reported by the MoF were very different from those by international agencies such as the Asian Development Bank (ADB) or the International Monetary Fund (IMF). For example, in 2009 the budget deficit reported by the MoF was 6.9%, which was far below 7.7% and 8.9% reported by the ADB and the IMF respectively. Together with the differences in budget deficit figures were the differences in public debt statistics. Despite the inconsistency, both the MoF and the IMF currently reported an increasing trend of Vietnam's public debt to go over 55% of GDP.

The data inconsistencies mainly came from

Vietnam's strange accounting norms which are very different from international standards. Firstly, they counted principal payments as part of total expenditure and hence contributed to the budget deficit. In contrast, some of the expenditure funded by government bond issuance, on projects in education, health, water resources, etc., was not included in the budget deficit. Furthermore, spending on big and prolonged projects was recorded into the state budget based on its disbursement, not on the amount of bonds issued. The inconsistent data caused some noise for market participants. It also created hurdles for international comparison, monitoring, and managing the nation's public debt.

There is a similarity between Vietnam's statistics on total external and external public debt. Although there is a gap between figures from different sources, all show a rapidly increasing trend. At the end of 2008, total external debt and external public debt were around 30% and 25% of GDP respectively. They have correspondingly jumped to over 40% and 30% of GDP by the end of 2010, delivering a warning signal on public debt management of Vietnam.

3. Public debt evaluation

Following the debt crisis in the 1980s and 1990s, there was intensive research on determinants of a sovereign debt crisis and various attempts to build early warning models. For example, Reinhart (2002) found that about 84% of the countries in his sample had been in a debt crisis following a monetary crisis. Therefore, economic indicators used for predicting monetary crises were also suitable for debt crisis forecasts. In addition, Catão and Sutton (2002) argued that the volatility of monetary policy, fiscal policy, and exchange rates also played an important role for trigger-

Table 1: Budget Deficit and Public Debt in Vietnam

Unit: %GDP

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Budget Deficit											
MoF				-4.9	-4.9	-4.9	-5.0	-5.7	-4.6	-6.9	-5.8
IMF	-4.3	-3.8	-3.3	-4.8	-1.8	-3.7	-0.4	-1.9	-0.9	-8.9	-6.0
ADB	-4.3	-3.5	-2.3	-2.2	0.2	-1.1	1.3	-1.0	-1.9	-7.7	na
Public Debt											
MoF								33.8	36.2	41.9	57.3
IMF	n/a	31.7	32.5	33.3	38.9	42.2	43.0	45.6	43.9	49.0	57.1

Source: MoF, IMF, and ADB

Table 2: External Debt in Vietnam

Unit: %GDP

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
MoF					37.2	32.2	31.4	32.5	29.8	39.0	42.2
IMF	39.7	41.6	35.0	33.7	33.5	32.2	31.5	32.3	33.5	40.7	40.8
ADB	42.1	39.4	38.4	40.8	39.8	36.3	33.2	33.6	29.9	na	na

Source: MoF, IMF, and ADB

Table 3: External Public Debt in Vietnam

Unit: %GDP

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
MoF			26.9	28.9	29.9	27.8	26.7	28.2	25.1	29.3	31.1
IMF				28.0	27.0	26.0	25.7	28.0	26.8	30.6	31.1

Source: MoF and IMF

ing crisis risks. Based on Manasse and Roubini (2005), in this section, we carry out evaluation on Vietnam's public debt via some measures: (i) solvency, e.g. public debt and external public debt as a fraction of GDP; (ii) liquidity, e.g. short term public debt and debt service as a fraction of foreign reserves and; (iii) volatility of economic growth, inflation, current account balance, and exchange rates.

Some key indicators of Vietnam's public debt and macroeconomic conditions are presented in Table 4. Thresholds are taken from Manasse and Roubini (2005). In their paper, Manasse and Roubini (2005) employed a new statistical method to systematically examine warning signals before a sovereign debt crisis. Their work showed that most crises occurred due to: (i) insolvency (because of high levels of debt and hyperinflation); (ii) illiquidity and; (iii) economic recession and currency overvaluation. Their model successfully identified warning signals that arose before a crisis. In other words, the probability of failure to predict a crisis before it actually happened, the type I errors, was very small. However, the probability of false alarms, the type II errors, was higher than desirable. Although there were certain limits, the paper was relatively comprehensive and successful in providing warning signals before sovereign debt crises. Therefore, thresholds given by Manasse and

Roubini (2005) will be used to make a comparison with corresponding indicators of Vietnam. This helps obtain a more precise overview of the current public debt situation and macroeconomic prospects of the country.

3.1. Solvency

Solvency reflects debt sustainability of a country. It depends on the stock of debt, compared with the ability to pay, measured by GDP, exports, or government revenue. A country is solvent in public debt if the discounted value of its future primary budget balances equals or exceeds net present value of its debt. Similarly, a nation is solvent in external debt if the discounted value of its future trade balances is greater than the net present value of foreign debt. Hence examining budget and trade balances is very important to evaluating solvency of a country's public debt. Persistent budget and trade deficits will accumulate to the current stock of debt. Currency overvaluation might result in trade imbalance and external debt. In contrast, a high GDP growth rate will raise the ability to pay debt.

Table 4. Some Selected Indicators on Public Debt, 2005 – 2010 (%)

	2005	2006	2007	2008	2009	2010	Threshold
External Public Debt/GDP	27.8	26.7	28.2	25.1	29.3	31.1	49.7
Total Public Debt/GDP			33.8	36.2	41.9	57.3	
External Public Debt /Exports	45.2	40.7	41.2	35.0	47.4	43.6	
External Public Debt /Revenue	97.7	90.0	95.9	89.4	124.4	113.9	214
Short-term Ext. Public Debt/Foreign Reserves	27.9	18.4	19.7	18.3	--	--	130
External Public Debt Service/Foreign Reserves	9.8	6.7	5.1	5.4	7.4	11.0	
Current Account Deficit/GDP	-1.1	-0.3	-10.0	-11.8	-7.7	-9.2	
Depreciation	0.7	0.9	0.7	1.2	4.7	11.1	
Government Bond Rates						11.0	9.7
Inflation	8.4	6.6	12.6	19.9	6.5	11.8	10.5
Economic Growth	8.4	8.2	8.5	6.3	5.3	6.8	-5.45

Source: The author's calculation from the MoF's public debt data and the ADB's economic data

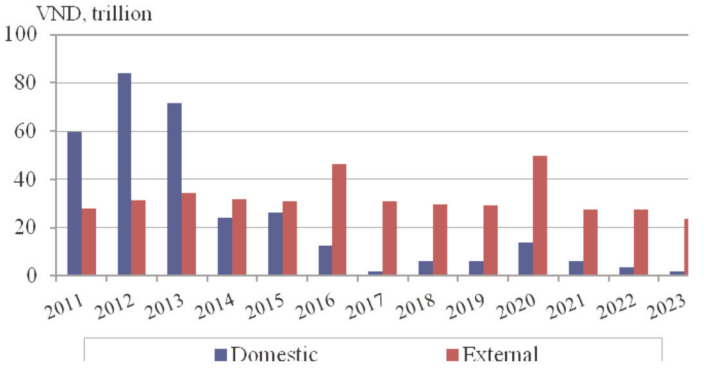
An investigation on Vietnam's public debt solvency implies that, by the end of 2010, the public debt-to-GDP, external debt to GDP, and external public debt to GDP ratios were over 55%, 40%, and 30% respectively. It is hard to say whether they went over safety levels, since different research produced different warnings for different countries. For example, Li et al (2010) pointed out that Eastern European and Central Asian countries were normally in crises with their external debt to GDP ratio surging to highs between 42% and 88%. Meanwhile, low and lower middle income countries fell into crises with a much lower ratio. External and external public debt in these economies before crises occurred accounted for less than 40% of GDP. However, it is noticeable that Vietnam's solvency situation has been deteriorating rapidly in recent years. According to the MoF statistics, within two years, from 2008 to 2010, its public debt to GDP ratio rose by over 20 percentage points, from 36.2% to 57.3%, while the external public debt to GDP ratio also went up over 6 percentage points, from 25.1% to above 31.1%. The increasing trend clearly threatens Vietnam's financial safety and the country needs to respond in a timely fashion.

In addition, Vietnam's public debt to total budget revenue ratio is also rising rapidly. In particular, by the end of 2010, total public debt was about double of the total budget revenue, up from 1.6 times in 2008. Meanwhile, state budget remains in deep deficit in the last few years and there are no signs of improvement in the near future. State budget projections imply that the government will continue to carry out expansionary fiscal policies with annual budget deficit of approximately 5% of GDP. As a consequence, the public debt to GDP ratio will certainly not halt at the current level of around 57%.

3.2. Liquidity

Liquidity measures a country's capacity to pay debt in the short term. It is normally calculated as the ratio of short term external debt and/or external debt service over reserves or exports. Since over 80% of the external public debt is long term with preferential interest rates, Vietnam faces almost no liquidity risk. Its short term external public debt to reserves ratio is approximately 20% while the external public debt service to reserves ratio is just below 10%. The figures were well under the safety threshold warned by international agencies.

Figure 1: Debt Service in 2011 – 2023



Source: The author's calculation from the MoF and Bloomberg data

Domestic public debt service is computed based on the amount of existing government and government guaranteed bonds. Meanwhile, external public debt was taken from the External Debt Report No. 7 by the MoF. It can be seen that, from 2011 to 2013, most of the government's debt service will be paid to domestic creditors. The total amount in the next three years will be around 215 trillion VND (over USD10 billion). The figure is equivalent to more than 40% of the total state budget revenue in 2010 and roughly equals Vietnam's present foreign reserves. Currently, the large amount of domestic public debt plus large annual budget deficit will put more pressure on monetary policy and inflation in the coming times.

External public debt service is relatively stable over time. In the next three years, on average, Vietnam will pay about VND 32 trillion (USD 1.5 billion) in forms of interests and principal each year. The number is just above 10% of the country's current reserves. Nevertheless, prolonged trade deficit is threatening to deplete its reserves and weakening liquidity in the long run.

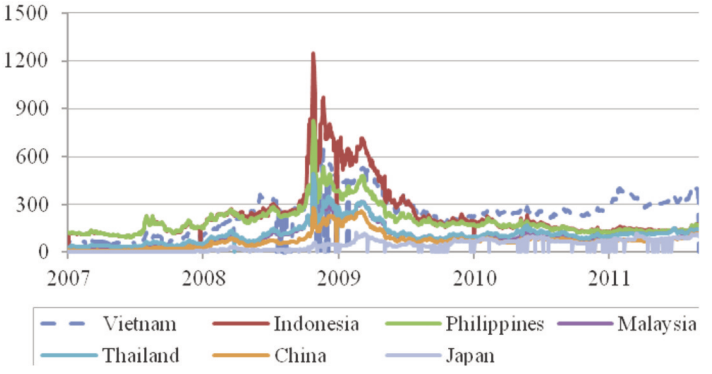
3.3. Macroeconomic volatility

The most positive signal from Vietnam's economy was probably its relatively rapid growth despite the context of the global crisis. In addition, solvency and liquidity measures were still below safety thresholds. However, after years of pursuing high growth, mainly through demand expansion, the country's economic prospects deteriorated faster than expected. Within the last three years, the growth rate slowed down remarkably and is unlikely to get back to the level before even when the global crisis ends.

In recent years, Vietnam's current account deficit has rocketed to roughly 10% of GDP, causing persistent depreciation of the home currency. From the beginning of 2010 to the first quarter of 2011, the Dong depreciated around 20% against the U.S. dollar. At the same time, prolonged budget imbalance and high money growth rates have made inflation spiral out of control. Specifically, since the beginning of 2008, Vietnam's consumer price index has gone up by nearly 75%. Currently, the government bond rate has been over 12% - a phenomenon that often appears before a debt crisis.

Vietnam has been consistently downgraded by international agencies due to its macro instability. The credit default swap (CDS)

Figure 2: Credit Default Swap on G-Bonds by Selected Countries, 2006 – 2010



Source: Bloomberg

rates, measuring the government bond risk in international markets, has surged and stayed high during the last few years. On the contrary, other regional countries' CDS index has been falling since the early 2009. Vietnam's economic prospects have become less appealing to international investors. Perhaps, it is right time for Vietnam to put aside its desire for short term high growth to settle economic instability.

4. Revenue analysis

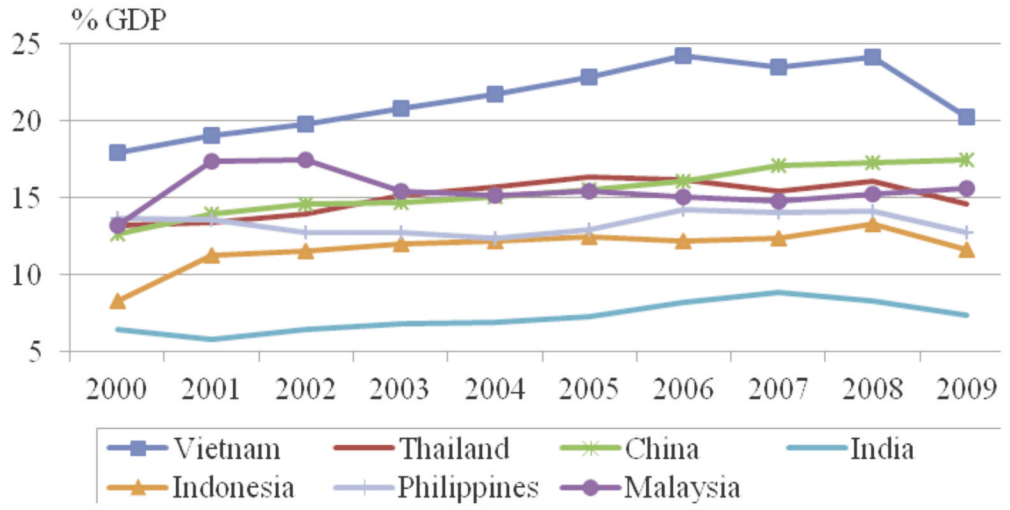
Total government revenue is one of the indicators used to assess the solvency of public debt. Due to its importance and unique characteristics, we conduct a deep examination on the risk of revenue sources. To maintain an annual balanced budget, thereby reducing the public debt to GDP ratio, a government has two choices: either cutting spending or increasing revenue. Public spending, to a certain extent, can be controlled immediately just by tightening which is very likely to be supported by the public. By contrast, raising revenue is probably much more difficult due to limited revenue sources, and of course receives no support from businesses as well as other tax payers in the economy.

According to the ADB statistics, on average, Vietnam's annual government revenue excluding grants in the previous decade reached 25.3% of GDP. Out of it, revenue from taxes and fees accounted for 21.5% of GDP, much higher than any other regional countries. In particular, the ratio stood at 15% in Thailand, 15.5% in both China and Malaysia, 13.3% in Philippines, 11.8% in Indonesia and only 7.3% in India. Except for 2009 when the government implemented a series of tax cuts and exemptions to stimulate aggregate demand, Vietnam's taxes and fees to GDP ratio has no tendency to fall. The preliminary estimate in 2010 and projection in 2011 showed that this ratio remains high, at around 23% GDP. This implied that, in addition to paying a high inflation tax of over 10% each year, overall Vietnamese bore a tax over income rate from 1.4 to 3 times higher than other Asian countries due to severe trade protectionism and tax overlaps. Raising taxes and fees to narrow the country's budget deficit is clearly limited.

Further analysis of the state revenue components in the past five years shows that about two thirds of total state revenue come from three main types of taxes, namely value added tax (VAT, 23%), corporate income tax (CIT, 30%), and tariff (13%). The rising trend in tariff revenue, from 9% in 2006 to 17% in 2009 and 14% in 2010 shows, on the one hand, a rapid development of international trade; on the other hand, high trade protection. The heavy dependence on this revenue source may cause a more serious budget deficit since Vietnam has to follow its tariff cut route as committed to the WTO in the coming years.

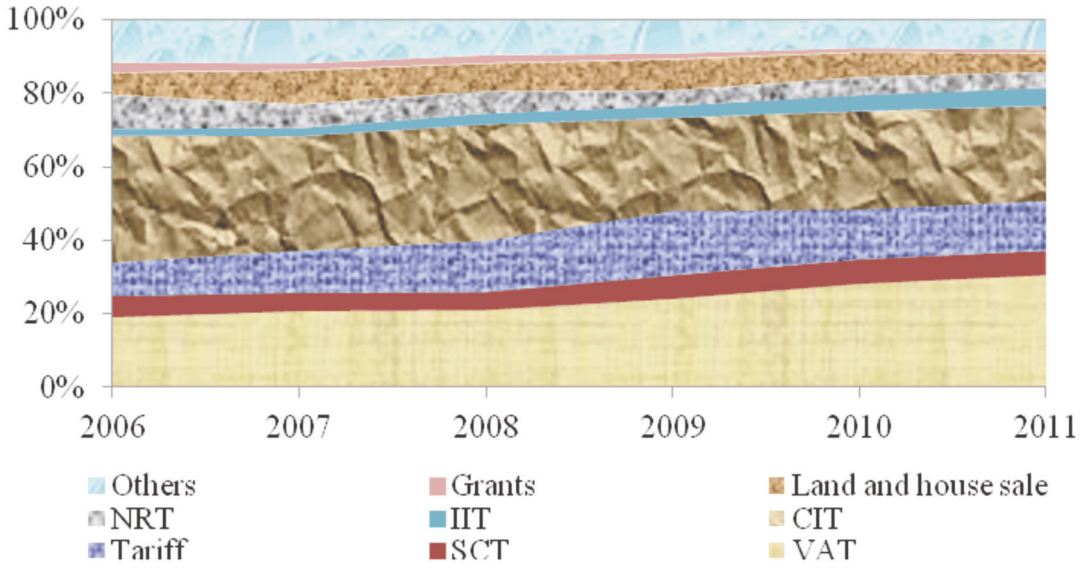
Moreover, as in a typical low-income country, Vietnam's individual income tax (IIT) accounts for only a small proportion (3-4%) of the total revenue and, in contrast to CIT, it tends to increase in recent years. In addition, special consumption tax on domestically produced goods (SCT) accounts for 6% of the total revenue and is also on an increasing trend. More noticeably, revenue from land use-right assignment and state-owned house sales is declining in both absolute size and proportion of the total budget revenue as these assets have been gradually depleted. Many economists believe that to truly reflect the government budget situation, the receipts from selling assets should not be counted in the annual budget balance. These returns are included by the government since they reduce the severity of the budget deficit implied by the numbers reported. In fact, this situation is similar to a person selling his or her property to finance spending. The debt may decrease but his or her stock of assets also falls proportionally. In other words, the person becomes less wealthy.

Figure 3: Total Tax Revenue/GDP: An International Comparison



Source: ADB

Figure 4: Revenue Decomposition



Source: Annual State Budget Statements and Projections (MoF)

Box 1: Inflation Tax

Government often opts for different methods to finance its budget deficit, ranging from increasing taxes, borrowing, to printing new money. In the case of increasing money supply, it will consequently lead to rising prices of goods and services in the economy.

The price increase, in this situation, is deemed to be a hidden tax. Suppose that prices increase by 10%, diminishing the purchasing power of money. The effect of this action is as if government imposes a 10% tax on its citizens' income. Accordingly, inflation caused by printing new money to finance spending is called inflation tax.

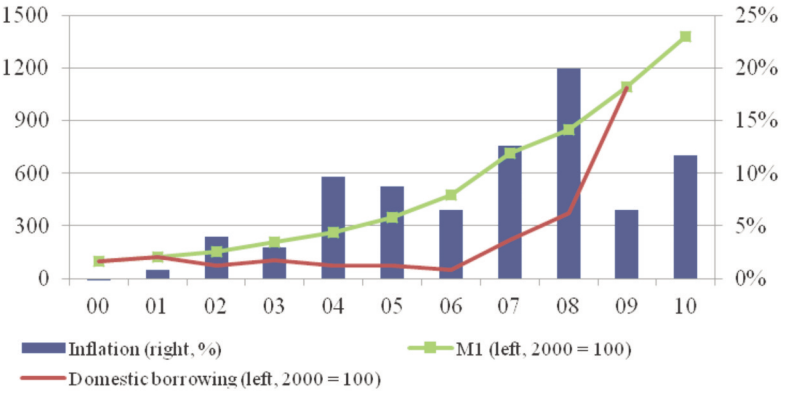
Although both inflation and income tax reduce people's real income, the former is less noticed and less opposed by the citizens than the latter. Therefore, many governments are tempted to go with inflation tax, especially when central banks are not independent. The burden of inflation tax falls mostly on money holders or on those who have fixed income. Normally, people with low and lower middle income lacking risk management tools were most severely affected.

In Vietnam, food and food–related prices always go up faster than others. Meanwhile, spending on these items accounts for a large proportion in the budget of those with a lower income. Accordingly, inflation tax, although reducing government's debt burden, relatively transfers income from the poor to the rich, broadening the gap between them.

Given that the current public debt exceeds USD 50 billion and is rising as the government continues to run a budget deficit, inflation tax is still considered one of the major tools to reduce public debt burden. Advancing next year's budget revenue for the current year's spending and buying back government bnds by the State Bank of Vietnam are the two channels causing money supply and inflation to increase rapidly.

Inflation tax can be avoided by committing to a balanced annual budget, and this can only be achieved by adopting a strict and long-term oriented spending cut program.

Figure B2. Money Supply, Domestic Borrowing and Inflation, 2000 – 2010



Source: ADB and GSO

Decomposing total revenue by different sectors in the last five years shows that, on average, state owned enterprises (SOEs), although large, contributed only 17% of total revenue and the figure only improved slightly over the years. Revenue from foreign invested enterprises, excluding crude oil, and that from non-state enterprises made up around 10% of the total. Meanwhile, crude oil and others occupied respectively 20% and 42% of the total budget revenue in the last five years. Notably, revenue from crude oil decreased from 29% in 2006 to only about 13% in 2010. However, returns from crude oil are similar to income from selling national assets. On the one hand, it helps relieve current budget deficit. On the other hand, it reduces state owned assets. Moreover, the earnings are unsustainable since resources are limited and depletable.

In addition, we also believe that to evaluate precisely the country's budgetary status, future obligations must be considered. One of the most important obligations in annual budget expenditure is pension and social subsidies. Part of employees' income is currently being extracted in the form of social insurance. In essence, this resembles government's borrowing from workers, and government's duty to pay future pension is no different from paying its debt. During the last five years, pension and social subsidies in Vietnam increased by more than three times, from about VND 22 trillion (8.25% of total budget expenditure) in 2006 to nearly VND 71 trillion (12.2% of total budget expenditure) in 2010. The burden of these payments is forecasted to increase sharply because of the fast growing number of retirees in the coming years, especially when the Vietnam's currently golden aged population ages. According to a recent forecast of the Institute of Labor Science and Social Affairs (ILSSA), the number of pensioners in Vietnam in 2020 will rise by over 2.5 times as compared with 2010.

The revenue analysis above shows that Vietnam's revenue to GDP ratio has already become very high compared to its neighbors; chances to raise revenue seem very small while many revenue sources are unsustainable and may slump or disappear in the coming years. Efforts to restrain and gradually eliminate deficits hence depend strongly on tightening public spending, a task which probably requires a comprehensive budgetary reform and economic restructuring.

5. Interest rate and exchange rate risks

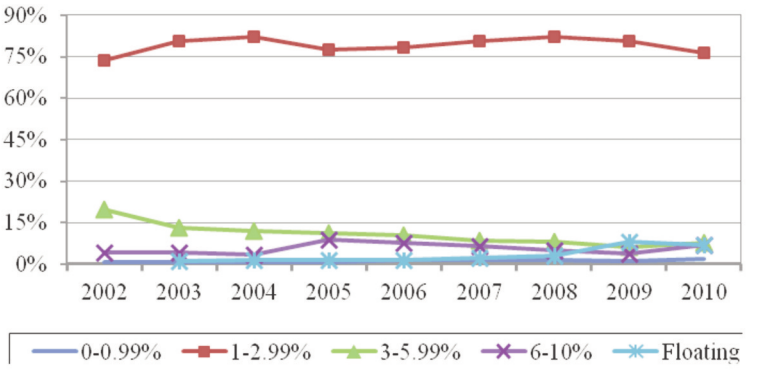
From 2000 to 2007, Vietnam arose as one of the fastest growing and most stable economies in the region. According to the ADB statistics, Vietnam's economic growth averaged at 7.6% per annum while inflation and budget deficit to GDP ratio stayed low at around 4.6% and 1.6% respectively over this period. Being a low-income country coupled with its economic achievements, Vietnam subsequently benefited from preferential loans with low interest rates from international organizations. Both onshore and offshore investors had no doubt in the country's debt repayment capacity. During this time, local government bond rates stood at far below 10%. Meanwhile, the External Debt Report No. 7 by the MoF showed that, by 31st December 2010, up to 80% of Vietnam government's foreign loans had preferential fixed interest rates under 3%. Since the report did not specify the interest rate for each loan, the effective interest rate could not accurately be determined. Alternatively, this rate would be approximated based on the bands of interest rates reported. A simple calculation indicates that the effective interest rate of Vietnam's foreign debt is approximately 1.54-3.75%, around one-third of that of domestic debt of 9.45%. This reflects that the burden on external debt service is quite small. The report, however, also showed that the size of commercial loans with increasing interest rates had tended to go up. By the end of 2010, nearly 6.8% of the total external public debt had interest rates from 6% to 10% and more than 7.0% of the total external public debt had floating interest rates.

After many years, Vietnam's economy that leaned much on quantity instead of quality has revealed its weakness as economic growth started to slow down while the Dong continued to depreciate. In the aftermath of the global economic crisis, the risk of a sovereign default by some European governments worries the international community. Investors are concerned over the debt repayment ability of those countries with high public debt and persistent budget deficits. During the last three years, Fitch Ratings, an international credit rating agency, downgraded Vietnam twice, to BB- in May 2008 and to B in July 2010. It also warned the country of its economic and financial instabilities. High growth of M2 and credit in many consecutive years results in a high proportion of non-performing loans. According to the ADB and the IMF, on average from 2000 to 2010, Vietnam's M2 and credit growth hit a record highs of approximately 30% and 33% respectively. Therefore, in addition to becoming a lower middle-income country, Vietnam is expected to find it hard to access preferential external loans in the future.

In spite of the low cost, Vietnam's external public debt conveys high risk of exchange rate fluctuations. A depreciation of the *Dong* would create a higher external debt burden in terms of local currency. The External Debt Report No. 7 also showed a rigid structure of external debt by currencies over time. By the end of 2010, Vietnam's external public debt comprised mainly of hard currencies including Japanese yen - JPY (38.8%), Special Drawing Rights - SDR (27.1%), USD (22.2%), and EUR (9.2%). Debt in other currencies only made up less than 3% of the total. Classifying by creditors, Japan was the biggest lender (34.3%), followed by the International Development Association - IDA (24.9%) and the ADB (15.0%). The U.S and EU countries accounted for only 0.3% and 6.9% of Vietnam's total external public debt respectively, but the proportion of debt in the currencies of these countries was very large. This demonstrates that lenders tend to use hard currencies. Consequently Vietnam was exposed more to exchange rate risks as these currencies normally appreciated against the Dong over time.

In more detail, from the beginning of 2010 to the end of second quarter of 2011, some main currencies including EUR, USD, and JPY have appreciated by around 12%, 13%, and 26% against the Dong respectively. This implies that

Figure 5: External Public Debt by Interest Rates



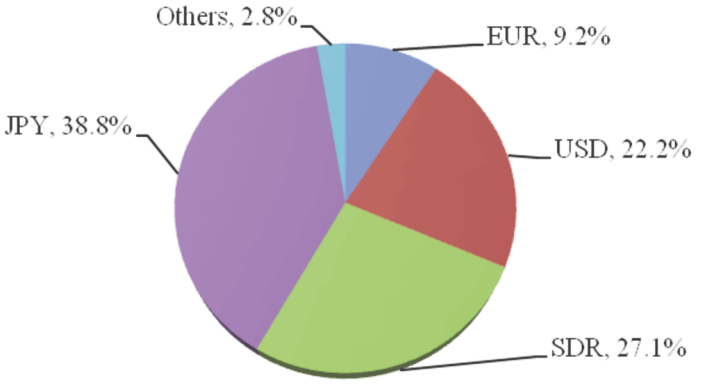
Source: The External Debt Report No.7 (MoF)

foreign public debt in terms of local currency has greatly risen and puts more pressure on fiscal deficit and monetary policies. To have a better overview of exchange rate risks on external public debt, we calculated the nominal effective exchange rate (NEER) of the Dong against a basket of other currencies in Vietnam's external public debt. The result shows that the Dong effectively depreciated by 41% from 2002 to 2010. However, the real value of the debt dropped as Vietnam's inflation rocketed by 110% in the same period, implying the burden of the debt has been shared to the public through inflation tax.

Figure 6: Effective Interest Rates on External Public Debt

Source: The External Debt Report No.7 (MoF)

Figure 7: External Public Debt by Currencies by 12/2010



Source: External Debt Report No.7 (MoF)

Box 2. Nominal Effective Exchange Rate

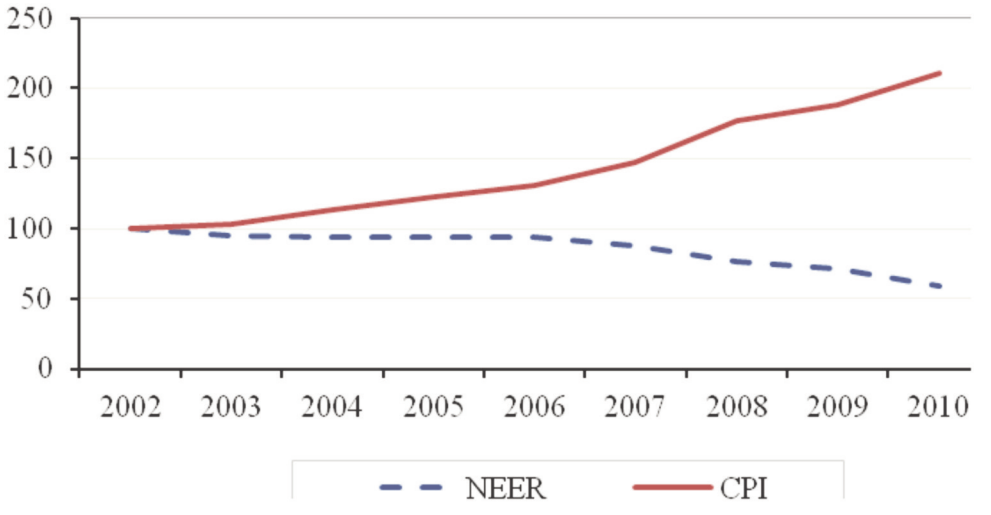
The nominal effective exchange rate (NEER) is used to determine an increase or decrease in relative value of a country's currency to a basket of others. Here the NEER is measured by computing the weighted average value of the home currency against foreign currencies in the external debt basket of Vietnam. More specifically, it is calculated as follows.

$$NEER = \sum_{i=1}^{n} w_i \frac{e}{e_i}$$

in which, e is the nominal exchange rate of VND against USD; e_i is the exchange rate of the currency *i* against the US dollar; w_i is the weight of the foreign currency *i* and *n* is the number of foreign currencies in the debt basket.

An increase in the NEER indicates the Dong is appreciating while a decrease means the Dong is depreciating against other 18 foreign currencies in Vietnam's external public debt basket. A fall in the NEER also implies a rising burden of Vietnam's foreign debt. The NEER in the period of 2002-2010 is calculated and presented in Figure B3.

Figure B3: Nominal Effective Exchange Rate (NEER) and CPI (2002 = 100)



Source: The author's calculation from MoF and GSO data

6. Public debt prospects 2011-2020

Budget deficit and public debt sometimes are necessary for a country, especially for those developing countries with high demand for infrastructure investment or in need of a stimulus package to counter a cyclical downturn caused by external shocks. However, persistent budget deficit and rapidly increased public debt not only lead to sovereign default risks but also affect negatively macro-economic stability or prosperity of a country in the long term.

With an average domestic savings rate of about 28% of GDP while national investment accounting for approximately 36% of GDP, Vietnam public debt increased quickly in the last 10 years. Borrowing may temporarily help increase total investment but eventually principals and interests must be repaid in the future. Put simply, the larger the debt today, the more will be paid tomorrow.

Prolonged budget deficit and borrowing also creates more pressure on inflation, especially when the central bank has no independence. In principle, to finance budget deficit, the government can choose to raise taxes and/or to borrow. The ability to increase Vietnam's government revenue seems to be limited because the mobilization rate is already among the highest levels in the region and many revenue sources are unsustainable. Borrowing via issuing bonds, on the one hand, would push up the interest rate and hence crowd out private investment. On the other hand, it would loosen money supply if issued bonds are repurchased via the discount window and open market operations.

Statistics also show a high correlation between budget deficit and inflation in developing countries. High inflation is considered the root of the distrust in the local currency, causing dollarization and volatility of foreign exchange rates.

Vietnam should be prudent and more responsible with its budget spending decisions to minimize the risk of a financial crisis. In order to do so, public spending cuts must be made thoroughly to ensure that public debt grows at a lower rate than the economy. This means that the debt should not grow faster than its income.

To predict the future of public debt, we generate various scenarios of the public debt to GDP ratio under different assumptions on budget deficit, bond rate, exchange rates, and inflation in Vietnam from now to 2020. By definition, public debt is the accumulation of deficits in the past and present. Assuming that there is no money printing, government must borrow to finance budget deficit, resulting in new debts. Thus, a change in current public debt is calculated as follows.

$$\Delta D = G - T + r\mathrm{D}, \qquad (1)$$

in which, D is total public debt, G is total government spending, T is total revenue, rD is interest payments. Dividing both sides of equation (1) by nominal gross domestic product, Y, yields:

$$\frac{\Delta D}{\mathrm{Y}} = \frac{G-T}{\mathrm{Y}} + r\frac{\mathrm{D}}{\mathrm{Y}}. \qquad (2)$$

Finally, noticing that $\Delta D/Y = \Delta(D/Y) + (\Delta Y/Y)(D/Y)$, we obtain the expression reflecting the change in public debt to GDP ratio over time as follows.

$$\Delta\left[\frac{D}{Y}\right] = \frac{G-T}{Y} + (r-g)\frac{D}{Y}, \qquad (3)$$

in which, $g = \Delta Y/Y$ is nominal GDP growth rate. All variables in Equation (3) are expressed in nominal terms. The equation can be interpreted as follows. Public debt to GDP ratio will increase if either government runs a primary budget deficit, (G - T), and/or the interest rate is higher than nominal GDP growth.

Box 3. Vinashin story and lessons for state owned conglomerates

Vietnam Shipbuilding Industry Corporation (VSIC) was established on 31st Jan 1996 by consolidating all shipbuilding enterprises throughout the country. The company's main objective is to develop the shipbuilding industry with advanced and modern technology, and to become a leading industry of the nation.

On 15th May 2006, the Prime Minister issued Decision No. 103 and 104/QĐ-TTg on setting up an experimental Vinashin Group based on reorganizing VSIC for diversified businesses. In particular, ship building & repairing and maritime transport are its core business, closely linked to science and technology, research & development.

With the government's support, Vinashin rapidly developed and was expected to become one of the largest ship building and maritime transport corporations in the region and over the world. During the period of 1996-2006, by utilizing skilled workers and engineers in the field, Vinashin constantly achieved a growth rate of return from 35% to 40% per year. By 2010, Vinashin had a network of hundreds of corporations, subsidiaries, joint ventures and associates. The total number of employees at Vinashin was once about 70,000 and accounted for more than 1.5% of Vietnam's workforce.

Among state owned conglomerates, Vinashin received more financial favors from government. In 2005, the group was given USD 750 million funded by government bonds issued in international markets with a yield rate of 7.125% per annum. In 2007, the group was also permitted to issue USD 600 million of bonds in international markets under the arrangement of the Credit Suisse. Within five years, Vinashin also received a significant amount of land to develop their projects and then used them as collateral to borrow from domestic banks.

However, instead of focusing on its core business, Vinashin quickly spread investment into other areas in which they had little experience, ranging from financial investment, mining, construction, etc. to automobile shop, resorts, and even pig farms. Adventurous projects made Vinashin's debts grow rapidly and the group suffered losses. Lax supervision from higher levels and poor management of the group's leaders resulted in a series of inefficient and incorrect capital uses such as borrowing to repay old debt, using short-term loans to support long-term debt, and even using working capital to invest.

The global crisis in 2008-2009 did cause a severe hit on unhealthy financial conditions at Vinashin. Demand for shipbuilding and shipping in the world plunged and Vinashin was not insulated from this. In 2008 alone, customers canceled contracts worth USD 8 billion with Vinashin. However, the group kept hiding its losses and reported profits in 2009 and in the first quarter of 2010. By June 2010, although Vinashin's total assets were estimated to be VND 104 trillion (USD 5.4 billion), its debt went up to VND 86 trillion (USD 4.5 billion).

In December 2010, Vinashin officially defaulted on the first installment, worth USD 60 million of the USD600 million debt issued in 2007 to international creditors. Credit rating agencies such as Moody immediately downgraded the rating of Vietnam and its state owned corporations. Consequently, Vietnam Electricity,

PetroVietnam and Vinacomin were forced to postpone or cancel their plans to issue bonds in international markets after the event.

In August 2010, the Vietnamese government established a committee to begin restructuring the failing Vinashin. Subsidiaries that were not in shipbuilding were transferred to other state owned enterprises. A "new" Vinashin will focus on the core businesses of shipbuilding, repairing and supporting industry. However, whether or not the group will be able to repay its debt in the coming years remains questionable.

Behind the consequences and lessons from Vinashin are concerns about the effectiveness and financial health of other state owned corporations. The current financial mechanism allows these entities to retain profits after taxes to invest in what they want. Many enterprises, especially those operating in natural resources mining with high return such as PetroVietnam and Vinacomin are also making investments out of their core business without being controlled.

Debt and losses of Vinashin as well as other state owned groups and corporations are raising alarm about the effectiveness and lax supervision in this sector.

Recent statistics show that total public investment, apart from being funded through state budget allocation and borrowing, was also largely financed by state-owned enterprises' retained profits and state-owned assets. On average, it accounted for 24-30% of the total investment. Cutting public investment probably has to start from these figures.

To forecast public debt, according to Equation (3), we have to predict primary budget deficit and nominal GDP growth rate over the years. Firstly, the component (G - T) is equal to overall deficit minus interest payments. Primary budget deficit is determined based on its own historical data and fiscal policy orientations in the future. Interest payments on external public debt are provided in the External Debt Report No.7 by the MoF while interest payments on domestic public debt are estimated based on outstanding government bonds in the domestic market. Secondly, estimates of nominal GDP growth rate are based on different scenarios of real GDP growth and inflation in the economy in the period 2011-2020.

We simulate D/Y using different assumptions about macroeconomic environment. The impacts and assumptions of some key variables in the benchmark scenario are summarized as follows.

Economic growth will help increase national income, therefore reducing the D/Y ratio. In return, economic growth in any given year depends partly on budget deficit. If government increases spending or lowers taxes to stimulate growth, D/Y may fall if Y increases or may increase if budget deficit is higher. In the benchmark scenario, the economic growth is assumed to be at 6% per annum during the period 2011-2020.

Inflation is a hidden tax. It can help reduce D/Y ratio as it enhances nominal GDP. However, it should be noticed that inflation erodes the burden of debt in domestic currency only. For external debt, the burden might increase as inflation will triggers depreciation of the Dong. Besides, inflation is greatly driven by money supply growth, which is in turn strongly related to budget deficit. In the benchmark scenario, except for 2011 when inflation

is expected to be about 18%, we assume that Vietnam's inflation will stand at 6% per year from 2012 to 2020.

Exchange rates are closely related to D/Y because they affect the burden of external public debt. A devaluation of domestic currency has an important impact on D/Y ratio as external public debt accounted for two thirds of Vietnam's total public debt. In the benchmark scenario, in the period 2011-2020, the Dong is assumed to depreciate by 5% per year against the U.S. dollar.

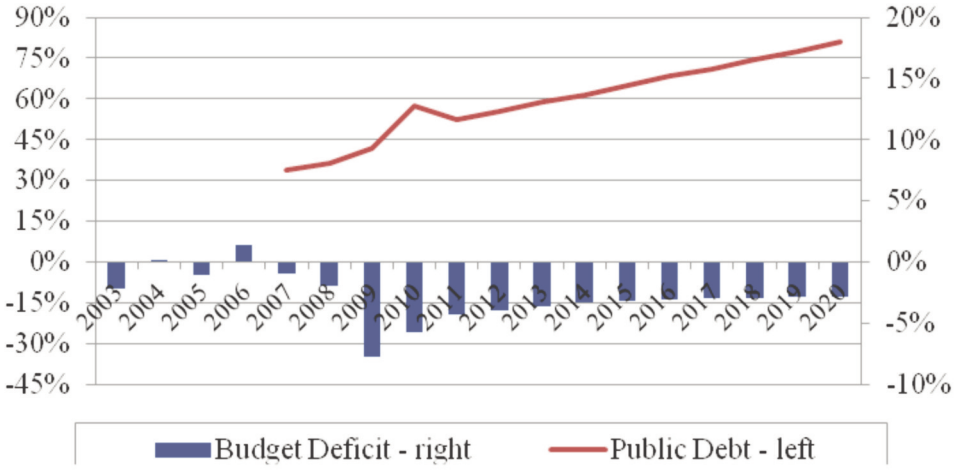
Interest is the cost of borrowing. The greater the interest rate is, the larger the budget deficit remains and so does the public debt. Interest on domestic debt can be calculated based on detailed information about the amount and coupon rate of outstanding government bonds and government guaranteed bonds. Annual interest payments on foreign public debt are extracted from the External Debt Report No.7.

Primary budget deficit is calculated by subtracting interest payments from overall budget deficit. For example, in 2009, Vietnam's overall budget deficit reported by the ADB accounted for 7.71% of GDP and interest payments estimated from the state budget statement was around 1.42% of GDP. Therefore, primary deficit in that year equaled 6.29% GDP. The corresponding estimated number in 2010 stood at around 4.5% GDP. Primary budget deficit will be accumulated to current public debt. In the benchmark scenario, we assume that Vietnam will manage to maintain its primary budget deficit to GDP ratio at 2.5% per year during 2011-2020. To achieve this rate, austerity must of course be followed with a long-term commitment.

Lastly, external public debt to domestic public debt ratio is assumed to remain at the present level of around 2:1. Interest rates of public debt in domestic and foreign currencies will stand at 10% and 5%, respectively.

Forecasts for overall budget deficit and public debt in the benchmark scenario are presented in Figure 8. This scenario implies that public spending should be drastically constrained to bring down overall budget deficit from

Figure 8: Forecasts on Budget Deficit and Public Debt in 2011-2020



Source: ADB and the author's calculation

7.7% in 2009 to 4.3% in 2011, 3.2% in 2015, and 2.9% of GDP in 2020. Accordingly, public debt will temporarily halt in 2011 due to hyperinflation (about 18%). However, in the following years, public debt to GDP ratio will rise steadily to 65.5% in 2015 and then 81.7% in 2020.

We also simulate budget deficit and public debt in different scenarios. The results show that, ceteris paribus, every percentage point increase/decrease in inflation or GDP growth from the benchmark scenario would decrease/increase overall budget deficit to GDP ratio by approximately 0.65 percentage points per year. As a result, public debt to GDP ratio would decrease/increase by about 6.5 percentage points by 2020. Similarly, for every percentage point increase in the home currency depreciation from the benchmark situation, overall budget deficit to GDP ratio would increase by 0.4 percentage points each year and consequently, public debt to GDP ratio will go up to 85.6% in 2020.

More noticeably, if primary budget deficit to GDP ratio increases by one percentage point from the benchmark scenario, it will cause overall budget deficit to GDP ratio to rise by 1.0 percentage points per year, and public debt will reach 91.5% of GDP in 2020. Even if the government succeeds to maintain its annual primary budget balanced, an overall budget deficit may still occur because of interest payments and domestic currency depreciation. In this scenario, public debt will remain at approximately 55% of GDP in 2020, a circumstance that will never happen given the current levels of government revenue and expenditure.

The prospects of Vietnam's public debt convey a clear message. In order to maintain a stable public debt to GDP ratio, besides triggering high inflation, the government must be able to control a balanced primary budget. Given the country's current high level of revenue to GDP ratio, the job can only be done through public spending contraction.

References

ADB (2010), *Key Indicators for Asia and The Pacific*, Asian Development Bank.

Catão L. and Sutton B. (2002), 'Sovereign Defaults the Role of Volatility', *IMF Working Paper No. 02/149.*

IMF Country Report: Vietnam Statistical Appendix, 2003, 2007, and 2010.

International Monetary Fund (2010), *World Economic Outlook Database.*

Li Y., Olivares-Caminal R., and Panizza U., (2010), 'Avoiding Avoidable Debt Crises: Lessons from Recent Defaults', in the book Sovereign Debt and the Financial Crisis: Will This Time Be Different? by Carlos A. Primo Braga and Gallina A. Vincelette (2010), World Bank.

Manasse P. and Roubini N. (2005), 'Rules of Thumb for Sovereign Debt Crises', *IMF working paper No. 05/42.*

Ministry of Finance (2010), *External Debt Report No. 7.*

Reinhart, C. M. (2002), 'Default, Currency Crises and Sovereign Credit Ratings', *NBER Working Paper 8738;*

Ministry of Finance, *State Budget Statements and Projections (2003 – 2011)*, Publishing House of Finance, Hanoi.

Vũ Tuấn Anh (2010), 'A summary on Vietnam's public investment in the last ten years', *Vietnam Institute of Economics.*