INTERNATIONAL MONETARY FUND AND
INTERNATIONAL DEVELOPMENT ASSOCIATION

VIETNAM

Joint IMF/World Bank Debt Sustainability Analysis 2007

Prepared by the staffs of the International Monetary Fund and
the International Development Association

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Vietnam remains at low risk of external debt distress over the medium term, provided that external borrowing will continue to be guided by the prudence that has characterized government policies over the last few years. However, the inclusion of domestic debt in the analysis paints a somewhat more nuanced picture, as prolonged maintenance of an expansionary fiscal policy or a permanently lower GDP growth rate could pose risks to long-run fiscal sustainability. These considerations reinforce the need for the adoption of a more restrained fiscal stance over the medium term, along with accelerated reform and equitization of SOEs.

A. Introduction

1. This analysis updates the DSA presented in Country Report No. 06/421 (Annex VII, pp. 48–59). The DSA was prepared jointly by the Bank and the Fund on the basis of the joint framework approved by the Bank and Fund Boards in April 2005.

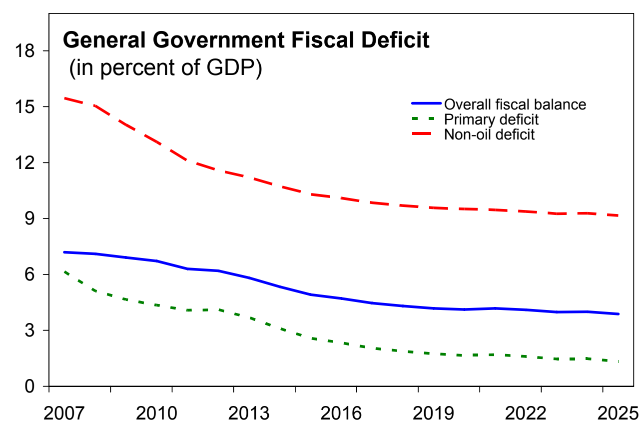
B. The Baseline Scenario

2. The baseline scenario is broadly consistent with the policies and public investment program contained in Vietnam's Socio-Economic Development Plan (SEDP) for 2006–10, which is also the government's Poverty Reduction strategy (PRS).

3. **The key assumptions envisage:**

- GDP growth at 8 percent on average during 2007–12 and 7.1 percent thereafter, slightly above the growth rates assumed in last year's DSA;

- Consumer price inflation picking up to 8 percent in 2007, somewhat above the rate projected under last year's DSA (6.5 percent), but progressively declining thereafter, to 4½ percent by 2012, and 2.8 percent over the long run, in line with major trading partners, broadly as envisaged in last year's DSA;
- Exchange rate of the dong continuing to depreciate by 1–1½ percent a year vis-à-vis the U.S. dollar over the medium term, and stabilizing over the long run, with the implied cumulative appreciation of the real exchange rate remaining modest, so that projected increases in labor productivity in the traded goods sector can help preserve competitiveness;
- Oil revenues declining at a somewhat faster pace than envisaged in last year's DSA, from a peak of 9¾ percent of GDP in 2006 to around 8 percent of GDP in 2007–08 and 5 percent of GDP from 2012 onward, in line with a projected leveling off of oil export receipts;
- Non-oil revenues increasing from around 17¼ percent of GDP in 2007 to 18¼ percent of GDP by 2012, as the government is expected to intensify its efforts to broaden the tax base and strengthen tax administration, with a view to mitigating the decline in total revenue;
- Total primary (non-interest) expenditure declining in relation to GDP broadly in line with the pace of adjustment envisaged in last year's DSA, with non-interest current expenditure declining from 18¾ percent of GDP in 2007 to about 17½ percent of GDP by 2010 as oil subsidies are phased out, and falling further to about 15½ percent of GDP over the long run as wage increases slow from 2010 onwards;
- Total public investment, including on-lending for the financing of SOE projects, would decline slightly faster than envisaged under last year's DSA, from about 12½ percent of GDP in 2007 to 10½ percent of GDP by 2012, as SOE reform and equitization help transfer more responsibilities for the financing of large investment projects to the private sector;
- The composition of new borrowing would shift towards debt secured under less concessional terms, with an increase of the average interest rate on external debt from an historical average of 3 percent to about 5½ percent during 2013-27;



- No further liabilities incurred in connection with SOCB reform, and no contingent liabilities arising from the SOE sector, as SOCB capital is being replenished through an injection of public funds equivalent to around 1 percent of GDP, and the government intends to meet any further needs for SOCB or SOE recapitalization through recourse to the government's equitization fund.

4. Under the above assumptions, the non-oil fiscal deficit would fall from 14¾ percent of GDP in 2007–08 to 10½ percent of GDP by 2012, and it would decline somewhat more slowly thereafter, leveling off at about 9 percent of GDP over the long run. The overall fiscal deficit would decline from about 7 percent of GDP in 2007 to 5½ percent of GDP by 2012, and would also remain on a downward trend thereafter, leveling off at about 4 percent of GDP in the long run. The primary deficit would decline from 5½ percent of GDP in 2007 to 3¾ percent of GDP in 2012, and it would fall further in subsequent years to 1 percent of GDP by 2027.

C. Public Sector Debt Sustainability

5. Under the baseline, the stock of total public debt, which is projected at 43½ percent of GDP in 2007, broadly in line with the average debt level of the ASEAN-4 countries,[1] would remain on an upward trend over the medium term. It would breach the authorities' notional ceiling of 50 percent of GDP in 2014, and would peak at about 51 percent of GDP in 2016, but would decline steadily thereafter, falling to 46½ percent of GDP by 2027.[2] Although the NPV of debt to GDP ratio would reach a high of 47½ percent, and the NPV of debt to revenue ratio would exceed 200 percent in 2017, both ratios would be placed on rapidly declining paths over the long run. The debt service to revenue ratio would remain manageable throughout the projection period.

6. The stress tests suggest that the path of total public debt is particularly sensitive to changes in the assumptions about the extent of fiscal adjustment and the GDP growth rate. The biggest risks would be posed by a failure to carry out the envisaged adjustment in the primary balance. As is illustrated under alternative scenario A2, if the primary balance were to remain unchanged at its level as of 2007 (-5.5 percent of GDP), the NPV of debt to GDP ratio, the NPV of debt to revenue ratio, and the debt service to revenue ratio would all rise sharply, and would reach levels of 81 percent, 351 percent and 30 percent, respectively, by 2027. A permanently lower GDP growth rate (alternative scenario A3) would also have significant, but somewhat more modest, adverse effects on the debt dynamics, with the NPV of debt to GDP ratio, the NPV of debt to revenue ratio, and the debt service to revenue ratio reaching levels of 54 percent, 233 percent, and 16 percent, respectively, by 2027.

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[1] ASEAN 4 includes: Indonesia, Malaysia, the Philippines, and Thailand.

[2] The authorities' notional debt ceiling excludes VDB liabilities and municipal bonds, which are included in the staff's definition of public and publicly guaranteed debt.

D. External Debt Sustainability

7. The baseline scenario assumes that the authorities continue their past policy of setting an annual external borrowing limit for the public sector, while maintaining a prudent policy in their issuance of sovereign bonds. In addition, the scenario does not incorporate any foreign holdings of domestic-currency bonds, as such holdings have been limited in the past. As a result, the baseline can be viewed as a relatively optimistic external debt scenario for a country that is rapidly transitioning to emerging-market status, and some of the underlying assumptions will need to be reconsidered in future DSA updates.

8. More specifically, the baseline assumes (i) a gradual decline in financing on IDA terms from 2.3 percent of GDP in 2007 to about 1.8 percent of GDP in 2010, followed by a slow move toward a blended mix of multilateral and bilateral finance; (ii) a gradual decline in ODA-financed on-lending; (iii) a decline in SOE external debt with government guarantee, as SOEs progressively gain direct access to foreign capital markets; (iv) continued robust growth in FDI; (v) net annual issuance of commercial sovereign bonds rising to 1.3 percent of GDP in 2008 (based on the assumption that the forthcoming US$1 billion bond issue will occur in 2008) and leveling off at 1 percent of GDP over the long run; and (vi) an increase in private debt from 5.2 percent of GDP in 2007 to 8.7 percent of GDP in 2027.

9. The baseline implies a fairly benign external debt situation. Total external debt is projected to decline from an already manageable 31 percent of GDP in 2007 to 26½ percent of GDP in 2012 and 22 percent by 2027. The NPV of the public and publicly guaranteed (PPG) debt to GDP ratio would level off at about 17 percent of GDP during 2010–2012, declining to 11½ percent of GDP by 2027. The NPV of PPG debt to exports ratio would record a more marked decline, falling from 24 percent in 2007 to 20 percent in 2012 and 14 percent by 2027. While the NPV of PPG debt to revenue ratio would edge up to 74 percent in 2012, it would fall markedly over the long run to 50 percent by 2027. The debt service-to-export ratio would remain very low at about 4 percent throughout the projection period. While the debt service-to-revenue ratio would rise steadily from 10 percent in 2007 to 15 percent by 2017, it would level off thereafter, and decline to 13 percent by 2027.

10. The alternative scenarios on the external debt show that Vietnam's external debt is most sensitive to changes in the assumption on the terms of new debt. Under the assumption that new public sector loans will have to be incurred at less favorable terms throughout the projection period (alternative scenario A2), the NPV of debt-to-exports ratio could remain at 24 percent over the long run, while the NPV of debt-to-revenue ratio would rise to 97 percent by 2017. These scenarios underscore the need for Vietnam to continue to attract FDI, and make maximal use of concessional sources of finance, to keep its external debt manageable.

11. Additional risks that are not reflected in the baseline call for continuation of a prudent external debt management policy. First, as in the case of the baseline for total public debt, the path of external debt is predicated on a relatively rapid pace of medium term fiscal

adjustment. If the adjustment is postponed or does not materialize, external borrowing could be more extensive, and the external public debt dynamics less favorable. Second, as foreign investors' appetite for Vietnamese paper continues to increase, the authorities could make increasing recourse not only to sovereign bond issues for purposes of on-lending to SOEs (as appears to be the case with the currently-planned US$1 billion bond issue) but also placements of domestic-currency government and SOE bonds abroad. Such operations could lead to a considerably faster than projected increase in the level of external debt.

E. Public Sector Debt Sustainability Scenario with Contingent Liabilities

12. Following the approach used for last year's DSA, this section attempts to incorporate the possible increase in contingent government liabilities associated with the operations of SOCBs and/or SOEs by developing two alternative scenarios.[3]

13. Alternative Scenario 1 assumes that the balance sheets of the four large SOCBs have improved markedly over the last two years, based on audited financial statements for 2005 and 2006, the quality of which has also been upgraded (some of these statements have been prepared and audited in line with international practices). While the recent financial statements continue to report capital levels (after accounting for accumulated losses) that are below the SBV's 8 percent requirement (significantly so in some cases), the estimates for recapitalization costs that might have to be borne by the government are lower than those based on financial statements from before 2005. This is not only because of stronger balance sheets, but also because the likelihood of private sector equity injections is much greater now than earlier anticipated. Taking these factors into account, and also the possibility that some non-performing assets may have gone unreported or remain off-balance sheet, the recapitalization costs to raise capital to 8 percent of assets are estimated at 4 percent of GDP. The associated contingent liabilities are assumed to be absorbed by the government in four equal installments over the period 2008–11 (one percent of GDP a year). Under this scenario, the public debt dynamics does not change in any drastic way with respect to the baseline. As is illustrated in Table 1, the NPV of public debt rises slightly faster than under the baseline over the medium term, but it follows a declining trend over the long run, and remains below the authorities' notional debt ceiling of 50 percent of GDP throughout the projection period.

14. Alternative Scenario 2 assumes that, aside from the need to recapitalize SOCBs, slow progress in improving the governance of SOEs, and delays in their equitization, lead to a slower than expected accumulation of resources in the equitization fund. As a result, the government has to assume a larger share of the costs of recapitalizing SOCBs and SOEs. The

[3] The DSA in Country Report No. 06/421 included two alternative scenarios with contingent liabilities ranging from 8 percent of GDP to 20 percent of GDP. The assumed size of contingent liabilities has been scaled down to 4 percent to 8 percent of GDP in this year's DSA on the assumption that the government's efforts to speed up the equitization of SOCBs, together with slowing growth in SOCB lending, will help contain possible future burdens on the budget associated with SOCB recapitalization.

scenario also assumes that SOEs increase their borrowing to finance their ambitious investment projects, and that some of these obligations will eventually have to be assumed by the government. As a result, over the medium term, the government incurs total contingent liabilities equivalent to 8 percent of GDP, which are again evenly spread over a period of four years (2008–11). Under these assumptions, the debt stock in NPV terms would breach the authorities' notional debt ceiling of 50 percent by 2012, peaking at around 51½ percent of GDP in 2015, and declining steadily over the longer term to about 45 percent in 2027.

15. The above scenarios illustrate the important ways in which contingent liabilities can influence public debt dynamics. Going forward, even if SOCB bank equitizations are implemented as planned in 2007–08, and the quality of new SOCB lending is improved considerably, SOEs' increasing borrowing from other sources, including the capital market and/or new SOE-affiliated financial conglomerates, could give rise to contingent government liabilities, which could be larger the longer needed SOE reforms are postponed. An increase in the size of these liabilities could, in turn, pose a threat to medium-term debt sustainability, if it is combined with a significant delay in the adjustment of the primary balance and/or a sharp reduction in the oil price. This could eventually require a larger and more abrupt adjustment to quickly place debt on a sustainable path, with the increasing debt servicing requirements likely to crowd out higher-priority investment and social expenditures.

F. Staff Assessment

16. Staffs consider Vietnam to be at low risk of external debt distress over the period 2007–12. Vietnam's external debt ratios would remain below applicable policy-based debt thresholds under the baseline, provided that external borrowing policies will continue to be guided by the prudence that has characterized Vietnam's policies over the last few years.[4] Vietnam's external debt dynamics are also robust to most standardized shocks. While the external public debt seems most sensitive to an exchange rate shock, the level of the debt would still remain well below the external debt applicable thresholds (Figure 2). A gradual decline in the NPV of external debt-to-GDP ratio would still occur under various shocks, as in the baseline scenario (Table 3b).

17. However, the inclusion of domestic debt paints a somewhat more nuanced picture. Under the baseline, the NPV of domestic debt would rise from 19.4 percent of GDP in 2007 to 27 percent of GDP by 2012, while the NPV of debt to revenue ratio would rise above 200 percent by 2017. As is illustrated in the stress tests, an expansionary fiscal policy or a permanently lower GDP growth rate could then pose risks to long-run fiscal sustainability. In particular, if the substantial fiscal adjustment envisaged to take place over the long run under

[4] Vietnam is considered a "medium" performer on the basis of the three-year moving average of its CPIA rating, which is the same as its CPIA score for 2005. Its applicable external debt thresholds are the following: (i) NPV of debt-to-exports = 150 percent; (ii) NPV of debt-to-GDP = 40 percent; and (iii) debt service-to-exports = 20 percent.

the baseline fails to materialize, the NPV of total public debt would rise to about 350 percent of revenue by 2027, while the debt service to revenue ratio would rise to 30 percent. These considerations underscore the importance of continued close monitoring of Vietnam's public debt dynamics, and reinforce the need for the adoption of a more restrained fiscal stance over the medium term, along with an acceleration of the pace of reform and equitization of SOEs.

Table 1. Vietnam: Public Sector Debt - Comparison of Debt Dynamics with and without Contingent Liabilities

(NPV of Debt-to-GDP Ratio)

	Est.	Projections												
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2026	2027
Baseline Scenario: Excluding Contingent Liabilities														
Public and Publicly Guaranteed Debt in NPV	37.6	37.9	39.7	40.8	41.7	43.0	44.2	45.3	46.5	47.1	47.4	47.3	43.8	43.3
Memo: Public and publicly guaranteed debt in percent of GDP	43.3	43.4	44.9	46.0	46.8	47.7	48.7	49.6	50.5	50.5	51.1	50.9	46.9	46.4
A. Alternative scenarios														
A1. Real GDP growth and primary balance are at historical averages	37.6	37.9	38.1	38.5	39.0	39.9	40.8	41.7	42.9	44.0	44.9	45.6	51.8	52.7
A2. Primary balance is unchanged from 2006	37.6	37.9	40.0	42.3	44.5	47.1	49.6	52.1	54.9	57.7	60.1	62.4	78.9	80.7
A3. Permanently lower GDP growth 1/	37.6	37.9	39.8	41.2	42.4	43.9	45.5	47.0	48.5	49.7	50.5	50.9	53.2	53.5
B. Bound tests														
B1. Real GDP growth is at historical average minus one standard deviations in 2007 - 2008	37.6	37.9	41.0	43.9	45.6	47.7	49.7	51.4	53.3	54.6	55.5	55.9	56.0	55.8
B2. Primary balance is at historical average minus one standard deviations in 2007 - 2008	37.6	37.9	39.4	41.0	42.0	43.2	44.4	45.5	46.6	47.3	47.6	47.5	43.9	43.4
B3. Combination of B1-B2 using one half standard deviation shocks	37.6	37.9	39.1	40.5	41.4	42.7	44.0	45.0	46.2	46.9	47.2	47.1	43.8	43.3
B4. One-time 30 percent real depreciation in 2007	37.6	37.9	47.1	47.4	47.6	48.4	49.3	50.1	50.9	51.6	51.5	51.2	46.8	46.4
B5. 10 percent of GDP increase in other debt-creating flows in 2007	37.6	37.9	49.0	49.4	49.7	50.4	51.3	52.0	52.8	53.1	53.1	52.7	47.0	46.4
Scenario 1: Contingent liabilities equivalent to 4 percnet of GDP 2/														
Public and Publicly Guaranteed Debt in NPV	37.6	37.9	40.7	42.7	44.4	46.3	47.2	48.0	48.9	49.3	49.4	49.1	44.5	44.0
Memo: Public and publicly guaranteed debt in percent of GDP	43.3	43.4	45.9	47.8	49.4	51.1	51.7	52.2	52.9	52.6	53.0	52.7	47.7	47.1
of which debt creating flows from contingent liabilities in percent of GDP	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A. Alternative scenarios														
A1. Real GDP growth and primary balance are at historical averages	37.6	37.9	39.1	40.5	42.0	43.7	44.4	45.1	46.2	47.1	47.9	48.5	53.6	54.5
A2. Primary balance is unchanged from 2006	37.6	37.9	41.1	44.3	47.4	50.8	53.1	55.4	58.0	60.6	63.0	65.1	80.7	82.3
A3. Permanently lower GDP growth 1/	37.6	37.9	40.9	43.1	45.0	47.3	48.5	49.6	51.0	51.9	52.5	52.7	54.0	54.3
B. Bound tests														
B1. Real GDP growth is at historical average minus one standard deviations in 2007 - 2008	37.6	37.9	42.1	45.8	48.4	51.2	52.8	54.2	55.8	56.9	57.5	57.8	56.8	56.6
B2. Primary balance is at historical average minus one standard deviations in 2007 - 2008	37.6	37.9	40.4	43.0	44.7	46.6	47.5	48.2	49.1	49.5	49.6	49.3	44.7	44.1
B3. Combination of B1-B2 using one half standard deviation shocks	37.6	37.9	40.1	42.5	44.2	46.2	47.1	47.9	48.8	49.3	49.4	49.1	44.6	44.1
B4. One-time 30 percent real depreciation in 2007	37.6	37.9	48.1	49.3	50.3	51.8	52.3	52.7	53.3	53.8	53.5	53.0	47.6	47.1
B5. 10 percent of GDP increase in other debt-creating flows in 2007	37.6	37.9	49.0	50.4	51.6	53.1	53.6	54.1	54.7	54.9	54.7	54.2	47.6	46.9
Scenario 2: Contingent liabilities equivalent to 8 percnet of GDP 3/														
Public and Publicly Guaranteed Debt in NPV	37.6	37.9	41.7	44.6	47.0	49.7	50.2	50.6	51.3	51.5	51.4	50.9	45.3	44.7
Memo: Public and publicly guaranteed debt in percent of GDP	43.3	43.4	46.9	49.7	52.0	54.4	54.6	54.9	55.3	54.8	55.0	54.5	48.4	47.8
of which debt creating flows from contingent liabilities in percent of GDP	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A. Alternative scenarios														
A1. Real GDP growth and primary balance are at historical averages	37.6	37.9	40.2	42.5	44.9	47.5	48.0	48.5	49.5	50.2	50.9	51.3	55.5	56.2
A2. Primary balance is unchanged from 2006	37.6	37.9	42.1	46.3	50.3	54.5	56.6	58.7	61.1	63.6	65.8	67.8	82.5	84.0
A3. Permanently lower GDP growth 1/	37.6	37.9	41.9	44.9	47.7	50.6	51.5	52.3	53.4	54.1	54.5	54.6	54.8	55.0
B. Bound tests														
B1. Real GDP growth is at historical average minus one standard deviations in 2007 - 2008	37.6	37.9	43.1	47.8	51.1	54.6	55.8	57.0	58.3	59.1	59.6	59.7	57.6	57.3
B2. Primary balance is at historical average minus one standard deviations in 2007 - 2008	37.6	37.9	41.4	45.0	47.4	50.0	50.5	50.9	51.6	51.8	51.7	51.2	45.4	44.8
B3. Combination of B1-B2 using one half standard deviation shocks	37.6	37.9	41.2	44.5	47.1	49.8	50.2	50.7	51.3	51.6	51.5	51.0	45.5	44.9
B4. One-time 30 percent real depreciation in 2007	37.6	37.9	49.1	51.1	52.9	55.1	55.2	55.4	55.7	56.0	55.5	54.8	48.4	47.7
B5. 10 percent of GDP increase in other debt-creating flows in 2007	37.6	37.9	49.0	51.4	53.4	55.8	56.0	56.2	56.6	56.6	56.3	55.6	48.2	47.5

Sources: Vietnamese authorities; and Fund staff estimates and projections.

1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of 20 (i.e., the length of the projection period).

2/ Assumes capital injection equal to 4 percent of GDP, spread over 2008-11.

3/ Assumes capital injection equal to 8 percent of GDP, spread over 2008-11.

Table 1a.Vietnam: Public Sector Debt Sustainability Framework, Baseline Scenario, 2004-2027
(In percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2004	2005	2006	Historical Average 5/	Standard Deviation 5/	2007	2008	2009	2010	2011	2012	2007-12 Average	2017	2027	2013-27 Average
Memo: non-oil deficit:	-10.7	-14.6	-13.5			-14.8	-14.5	-12.8	-11.7	-11.0	-10.5		-9.3	-8.6	
Public sector debt 1/	42.4	43.8	43.3			43.4	44.9	46.0	46.8	47.7	48.7		50.9	46.4	
o/w foreign-currency denominated	27.0	26.4	24.7			24.0	24.1	23.0	22.0	21.7	21.5		20.2	14.7	
Change in public sector debt	1.4	1.4	-0.5			0.1	1.5	1.1	0.8	1.0	1.0		-0.2	-0.5	
Identified debt-creating flows	-2.8	-0.2	-1.9			1.1	1.2	0.5	0.3	0.4	0.5		-0.3	-0.6	
Primary deficit	1.8	5.0	2.9	3.0	1.8	5.5	5.1	4.2	3.9	3.9	3.8	4.4	2.2	1.1	2.1
Revenue and grants	26.7	25.9	27.1			25.5	25.9	25.1	24.3	23.7	23.3		23.1	23.0	
of which : grants	0.4	0.3	0.4			0.3	0.3	0.3	0.3	0.2	0.2		0.0	0.0	
Primary (noninterest) expenditure	28.5	30.9	30.0			31.0	31.0	29.3	28.3	27.6	27.1		25.3	24.1	
Automatic debt dynamics	-4.6	-5.2	-4.8			-4.4	-3.9	-3.7	-3.7	-3.4	-3.3		-2.5	-1.7	
Contribution from interest rate/growth differential	-3.2	-3.9	-3.9			-3.5	-3.3	-3.2	-3.2	-3.1	-3.1		-2.4	-1.6	
of which : contribution from average real interest rate	-0.2	-0.6	-0.6			-0.2	0.0	0.1	0.1	0.3	0.3		1.0	1.6	
of which : contribution from real GDP growth	-3.0	-3.3	-3.3			-3.3	-3.3	-3.3	-3.4	-3.4	-3.4		-3.4	-3.1	
Contribution from real exchange rate depreciation	-1.4	-1.3	-0.9			-0.9	-0.6	-0.5	-0.4	-0.3	-0.2		...	...	
Other identified debt-creating flows	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Debt relief (HIPC and other)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	4.2	1.6	1.5			-1.0	0.2	0.6	0.5	0.5	0.4		0.1	0.1	
NPV of public sector debt			37.6			37.9	39.7	40.8	41.7	43.0	44.2		47.3	43.3	
o/w foreign-currency denominated	...	...	19.0			18.5	18.9	17.9	16.9	16.9	17.0		16.6	11.5	
o/w external	...	...	19.0			18.5	18.9	17.9	16.9	16.9	17.0		16.6	11.5	
NPV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	2.8	5.9	3.8			6.9	6.6	5.8	5.6	5.6	5.6		4.4	3.8	
NPV of public sector debt-to-revenue and grants ratio (in percent)	...	...	138.6			148	153	162	172	181	190		205.1	188.6	
NPV of public sector debt-to-revenue ratio (in percent)	...	...	140.5			150.1	154.8	164.2	173.5	182.6	191.8		205.1	188.6	
o/w external 3/	...	...	71.2			73.1	73.7	71.9	70.4	71.9	73.8		71.8	50.2	
Debt service-to-revenue and grants ratio (in percent) 4/	3.8	3.2	3.4			5.5	5.9	6.4	6.9	7.3	7.6		9.3	11.5	
Debt service-to-revenue ratio (in percent) 4/	3.8	3.3	3.4			5.6	5.9	6.5	7.0	7.4	7.7		9.3	11.5	
Primary deficit that stabilizes the debt-to-GDP ratio	0.4	3.7	3.3			5.4	3.7	3.1	3.1	2.9	2.8		2.4	1.6	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.8	8.4	8.2	7.1	1.1	8.3	8.2	8.0	8.0	7.8	7.8	8.0	7.1	7.1	7.1
Average nominal interest rate on forex debt (in percent)	1.8	2.1	2.1	2.0	0.1	2.4	2.7	2.7	2.5	2.5	2.5	2.5	3.1	4.5	3.6
Average real interest rate on domestic currency debt (in percent)	-4.3	-5.7	-3.5	-1.8	4.2	-2.2	-1.5	-0.6	-0.7	0.7	1.0	-0.5	2.7	4.1	2.8
Inflation rate (CPI, in percent)	9.7	8.8	6.6	4.1	4.1	8.0	7.3	6.5	6.5	5.0	4.5	6.3	2.8	2.8	2.9
Growth of real primary spending (deflated by GDP deflator, in percent)	1.4	17.4	5.1	...	...	11.8	8.3	2.1	4.0	5.2	5.7	6.2	5.8	5.8	6.3
Grant element of new external borrowing (in percent)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Sources: Vietnamese authorities; and Fund staff estimates and projections.
1/ General government.
2/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period.
3/ Revenues excluding grants.
4/ Debt service is defined as the sum of interest and amortization of medium and long-term debt.
5/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 2a.Vietnam: Sensitivity Analysis for Key Indicators of Public Debt 2007-2027

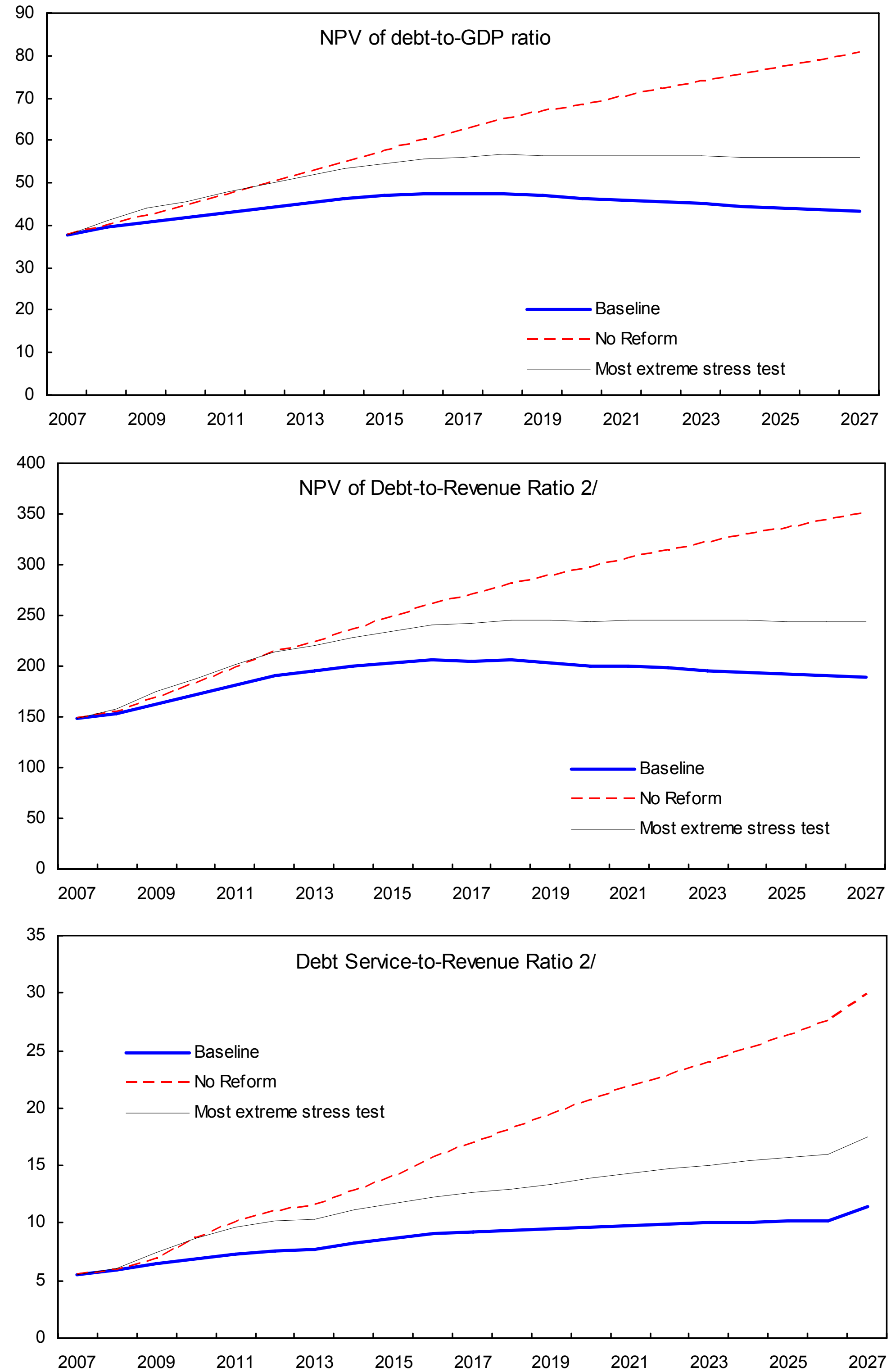
	Projections							
	2007	2008	2009	2010	2011	2012	2017	2027
NPV of Debt-to-GDP Ratio								
Baseline	38	40	41	42	43	44	47	43
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	38	38	39	39	40	41	46	53
A2. Primary balance is unchanged from 2007	38	40	42	45	47	50	62	81
A3. Permanently lower GDP growth 1/	38	40	41	42	44	45	51	54
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2008-2009	38	41	44	46	48	50	56	56
B2. Primary balance is at historical average minus one standard deviations in 2008-2009	38	39	41	42	43	44	47	43
B3. Combination of B1-B2 using one half standard deviation shocks	38	39	40	41	43	44	47	43
B4. One-time 30 percent real depreciation in 2008	38	47	47	48	48	49	51	46
B5. 10 percent of GDP increase in other debt-creating flows in 2008	38	49	49	50	50	51	53	46
NPV of Debt-to-Revenue Ratio 2/								
Baseline	148	153	162	172	181	190	205	189
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	148	147	153	160	168	175	198	229
A2. Primary balance is unchanged from 2007	148	155	168	183	198	213	270	351
A3. Permanently lower GDP growth 1/	148	154	164	174	185	195	221	233
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2008-2009	148	158	175	188	201	213	242	243
B2. Primary balance is at historical average minus one standard deviations in 2008-2009	148	152	163	172	182	191	206	189
B3. Combination of B1-B2 using one half standard deviation shocks	148	151	161	170	180	189	204	189
B4. One-time 30 percent real depreciation in 2008	148	182	189	196	204	212	222	202
B5. 10 percent of GDP increase in other debt-creating flows in 2008	148	189	197	204	212	220	229	202
Debt Service-to-Revenue Ratio 2/								
Baseline	6	6	6	7	7	8	9	11
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	6	6	4	4	5	5	9	15
A2. Primary balance is unchanged from 2007	6	6	7	9	10	11	17	30
A3. Permanently lower GDP growth 1/	6	6	7	7	8	8	11	16
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2008-2009	6	6	7	9	10	10	13	18
B2. Primary balance is at historical average minus one standard deviations in 2008-2009	6	6	6	7	8	8	9	12
B3. Combination of B1-B2 using one half standard deviation shocks	6	6	5	6	7	7	9	11
B4. One-time 30 percent real depreciation in 2008	6	6	8	8	9	9	11	14
B5. 10 percent of GDP increase in other debt-creating flows in 2008	6	6	19	12	10	10	11	14

Sources: Vietnamese authorities; and Fund staff estimates and projections.

1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of 20 (i.e., the length of the projection period).

2/ Revenues are defined inclusive of grants.

Figure 1. Vietnam: Indicators of Public Debt Under Alternative Scenarios, 2007-2027 1/



Source: Fund staff projections and simulations.
1/ Most extreme stress test is test that yields highest ratio in 2017.
2/ Revenue including grants.

Table 3a.Vietnam: External Debt Sustainability Framework, Baseline Scenario, 2004-2027 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 6/	Standard Deviation 6/	Projections									
	2004	2005	2006			2007	2008	2009	2010	2011	2012	2007-12 Average	2017	2027	2013-27 Average
External debt (nominal) 1/	**33.5**	**32.2**	**30.2**			**30.8**	**30.2**	**28.5**	**27.4**	**27.0**	**26.7**		**25.7**	**22.2**	
o/w public and publicly guaranteed (PPG)	27.2	26.6	25.0			24.3	24.4	23.3	22.4	22.1	21.9		20.6	15.1	
Change in external debt	-0.2	-1.3	-2.0			0.6	-0.6	-1.7	-1.1	-0.4	-0.3		0.0	-0.4	
Identified net debt-creating flows	-3.8	-6.1	-6.6			-1.8	-1.6	-1.2	-0.9	-0.9	-0.9		-0.6	-0.5	
Non-interest current account deficit	**2.7**	**0.1**	**-0.6**	**-0.3**	**3.3**	**2.2**	**2.1**	**2.4**	**2.5**	**2.4**	**2.3**		**2.0**	**2.0**	1.9
Deficit in balance of goods and services	6.9	5.0	4.6			8.0	8.1	8.0	8.2	7.6	7.1		6.0	5.1	
Exports	66.6	69.0	73.7			75.5	78.1	80.5	82.6	84.7	87.1		92.2	79.8	
Imports	73.6	74.0	78.2			83.5	86.2	88.5	90.8	92.3	94.2		98.2	84.9	
Net current transfers (negative = inflow)	-5.5	-6.4	-6.6	-5.2	1.0	-7.5	-6.9	-6.4	-6.0	-5.5	-5.1		-4.0	-2.5	-3.5
o/w official	-0.4	-0.4	-0.4			-0.3	-0.3	-0.3	-0.2	-0.2	-0.2		-0.2	-0.1	
Other current account flows (negative = net inflow)	1.3	1.4	1.4			1.7	0.9	0.8	0.3	0.3	0.3		0.0	-0.6	
Net FDI (negative = inflow)	**-2.8**	**-2.3**	**-2.6**	**-3.1**	**0.9**	**-2.7**	**-2.6**	**-2.6**	**-2.5**	**-2.5**	**-2.3**		**-2.1**	**-2.1**	-2.1
Endogenous debt dynamics 2/	**-3.7**	**-3.9**	**-3.3**			**-1.2**	**-1.1**	**-1.0**	**-0.9**	**-0.8**	**-0.8**		**-0.4**	**-0.4**	
Contribution from nominal interest rate	0.7	0.9	0.9			1.0	1.1	1.1	1.1	1.1	1.1		1.2	1.1	
Contribution from real GDP growth	-2.3	-2.4	-2.3			-2.2	-2.2	-2.1	-2.0	-1.9	-1.9		-1.7	-1.5	
Contribution from price and exchange rate changes	-2.1	-2.3	-1.9			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**3.6**	**4.7**	**4.6**			**2.4**	**1.0**	**-0.5**	**-0.2**	**0.5**	**0.5**		**0.5**	**0.1**	
o/w exceptional financing	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
NPV of external debt 4/	...	...	24.3			25.0	24.7	23.0	22.0	21.9	21.8		21.7	18.7	
In percent of exports	...	...	33.0			33.1	31.7	28.6	26.6	25.8	25.0		23.5	23.4	
NPV of PPG external debt	**...**	**...**	**19.0**			**18.5**	**18.9**	**17.9**	**16.9**	**16.9**	**17.0**		**16.6**	**11.5**	
In percent of exports	**...**	**...**	**25.9**			**24.5**	**24.2**	**22.2**	**20.5**	**20.0**	**19.5**		**18.0**	**14.4**	
In percent of government revenues	**...**	**...**	**71.2**			**73.1**	**73.7**	**71.9**	**70.4**	**71.9**	**73.8**		**71.8**	**50.2**	
Debt service-to-exports ratio (in percent)	**6.0**	**5.6**	**5.3**			**5.5**	**5.6**	**5.1**	**5.1**	**5.2**	**5.2**		**5.3**	**6.0**	
PPG debt service-to-exports ratio (in percent)	**3.9**	**3.7**	**3.3**			**3.4**	**3.5**	**3.5**	**3.6**	**3.7**	**3.7**		**3.7**	**3.8**	
PPG debt service-to-revenue ratio (in percent)	**9.9**	**10.1**	**9.2**			**10.2**	**10.7**	**11.5**	**12.3**	**13.3**	**14.0**		**14.9**	**13.1**	
Total gross financing need (billions of U.S. dollars)	2.0	1.2	0.7			2.9	3.6	4.2	5.0	5.9	6.7		11.6	29.8	
Non-interest current account deficit that stabilizes debt ratio	2.9	1.4	1.3			1.6	2.7	4.1	3.6	2.8	2.6		2.0	2.4	
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.8	8.4	8.2	7.3	1.3	8.3	8.2	8.0	8.0	7.8	7.8	8.0	7.1	7.1	7.1
GDP deflator in US dollar terms (change in percent)	6.6	7.4	6.3	2.3	4.0	4.8	6.2	4.4	4.0	3.4	3.0	4.3	2.8	2.8	2.8
Effective interest rate (percent) 5/	2.4	3.0	3.3	3.0	0.5	3.8	4.2	4.2	4.3	4.4	4.5	4.2	5.2	5.1	5.3
Growth of exports of G&S (US dollar terms, in percent)	29.6	20.7	22.7	17.9	9.4	16.3	18.9	16.2	15.3	14.3	14.1	15.9	10.4	7.1	9.5
Growth of imports of G&S (US dollar terms, in percent)	25.1	17.2	21.5	15.2	11.4	21.1	18.7	15.8	15.3	13.4	13.2	16.2	10.2	7.3	9.3
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	29.4	15.4	28.8	29.0	18.0	15.8	22.7	9.4	1.1	7.3
Aid flows (in billions of US dollars) 7/	1.6	1.7	1.6			1.8	1.9	2.0	2.1	2.1	2.2		2.7	3.4	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			1.1	0.9	1.0	0.9	0.7	0.7		0.2	0.0	0.2
Memorandum items:															
Nominal GDP (billions of US dollars)	45.5	53.1	61.0			69.2	79.5	89.7	100.7	112.3	124.6		201.7	526.7	
(NPVt-NPVt-1)/GDPt-1 (in percent)	...	...	...			1.9	3.3	1.2	1.2	1.9	2.0	1.9	1.5	0.7	1.1

Source: Fund staff simulations.

1/ Includes both public and private sector external debt.
2/ Derived as [r - g - r(1+g)]/(1+g+r+gr) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and r = growth rate of GDP deflator in U.S. dollar terms.
3/ Includes exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; and valuation adjustments. For projections also includes contribution from price and exchange rate changes.
4/ Assumes that NPV of private sector debt is equivalent to its face value.
5/ Current-year interest payments divided by previous period debt stock.
6/ Historical averages and standard deviations are derived over the past 10 years.
7/ Defined as grants, concessional loans, and debt relief.
8/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the NPV of new debt).

Table 3b. Vietnam: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2007-27
(In percent)

	Projections							
	2007	2008	2009	2010	2011	2012	2017	2027
NPV of debt-to-GDP ratio								
Baseline	18	19	18	17	17	17	17	12
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008-27 1/	18	18	15	12	10	8	0	0
A2. New public sector loans on less favorable terms in 2008-27 2/	18	20	20	19	20	21	22	19
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2008-09	18	19	19	18	18	18	17	12
B2. Export value growth at historical average minus one standard deviation in 2008-09 3/	18	26	36	34	33	32	25	13
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008-09	18	20	20	19	19	20	19	13
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008-09 4/	18	22	23	22	22	22	19	12
B5. Combination of B1-B4 using one-half standard deviation shocks	18	27	36	34	33	33	26	14
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	18	26	25	24	24	24	23	16
NPV of debt-to-exports ratio								
Baseline	24	24	22	21	20	20	18	14
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2007-26 1/	24	23	18	14	12	9	0	0
A2. New public sector loans on less favorable terms in 2007-26 2/	24	26	24	23	23	24	24	24
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2008-09	24	24	22	21	20	20	18	14
B2. Export value growth at historical average minus one standard deviation in 2008-09 3/	24	36	52	48	46	43	32	19
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008-09	24	24	22	21	20	20	18	14
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008-09 4/	24	28	29	27	26	25	21	15
B5. Combination of B1-B4 using one-half standard deviation shocks	24	34	43	40	38	36	27	17
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	24	24	22	21	20	20	18	14
NPV of debt-to-revenue ratio								
Baseline	73	74	72	70	72	74	72	50
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2007-26 1/	73	69	60	49	42	35	2	0
A2. New public sector loans on less favorable terms in 2007-26 2/	73	78	79	80	84	89	97	85
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2008-09	73	75	75	73	75	77	75	52
B2. Export value growth at historical average minus one standard deviation in 2008-09 3/	73	100	145	141	140	139	109	56
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008-09	73	80	82	81	82	85	82	58
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008-09 4/	73	86	94	92	93	94	83	52
B5. Combination of B1-B4 using one-half standard deviation shocks	73	106	146	143	142	142	114	62
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	73	103	100	98	100	103	100	70

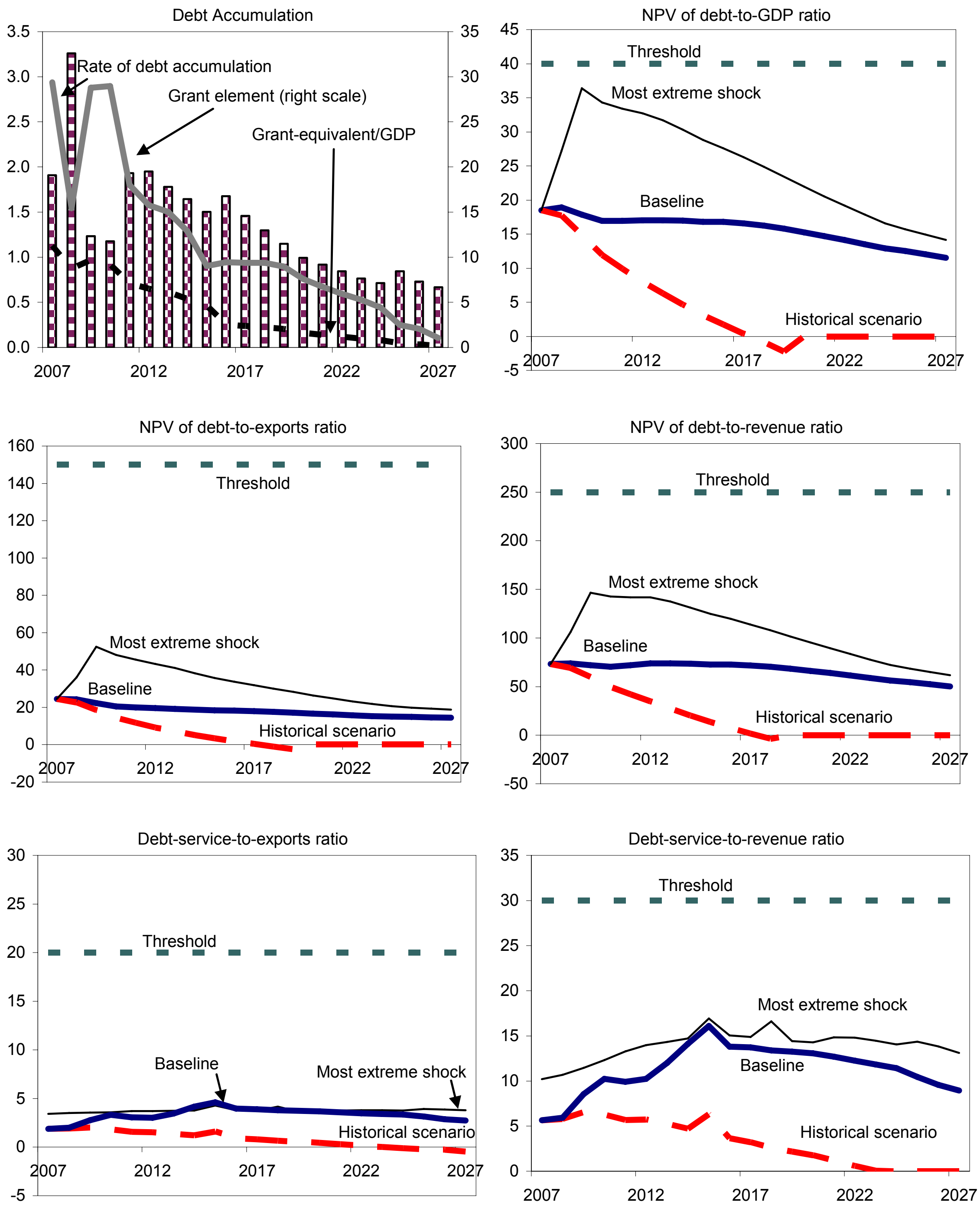
Table 3b. Vietnam: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2007-27 (continued)
(In percent)

	Projections							
	2007	2008	2009	2010	2011	2012	2017	2027
Debt service-to-exports ratio								
Baseline	3	4	4	4	4	4	4	4
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008-27 1/	2	2	2	2	2	2	1	0
A2. New public sector loans on less favorable terms in 2008-27 2/	2	2	2	2	1	1	2	3
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2008-09	2	2	2	2	2	2	2	2
B2. Export value growth at historical average minus one standard deviation in 2008-09 3/	2	2	3	3	3	3	4	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008-09	2	2	2	2	2	2	2	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008-09 4/	2	2	2	2	2	2	2	2
B5. Combination of B1-B4 using one-half standard deviation shocks	2	2	3	3	3	3	3	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	2	2	2	2	2	2	2	2
Debt service-to-revenue ratio								
Baseline	10	11	11	12	13	14	15	13
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008-27 1/	6	6	7	6	6	6	3	0
A2. New public sector loans on less favorable terms in 2008-27 2/	6	6	5	6	5	6	8	10
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2008-09	6	6	7	7	6	7	8	7
B2. Export value growth at historical average minus one standard deviation in 2008-09 3/	6	6	8	10	9	10	13	8
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008-09	6	6	7	7	7	8	9	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008-09 4/	6	6	7	7	7	8	10	7
B5. Combination of B1-B4 using one-half standard deviation shocks	6	6	9	10	10	10	14	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	6	8	9	9	9	9	11	10
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	1	1	1	1	1	1	1	1

Source: Fund staff projections and simulations.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline., while grace and maturity periods are the same as in the baseline.
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implici
an offsetting adjustment in import levels).
4/ Includes official and private transfers and FDI.
5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.
6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Figure 2. Vietnam: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2007-27



Source: Fund staff projections and simulations.