Vietnam: Joint Bank-Fund Debt Sustainability Analysis[1]

Public sector debt sustainability

Since the time of the last joint DSA, the most important new signal on the likely direction of Vietnam's economic policies over the medium term has been the recent approval by the Politburo and National Assembly of the 5-year Socio Economic Development Plan (SEDP) for 2006-2010, which is also the government's new Poverty Reduction Strategy (PRS). The new baseline is intended to broadly capture the implications of the policies contained in the SEDP evaluated at the currently high international price of oil, excluding any effects from the contingent government liabilities in the SOE and SOCB sectors.

Alternative scenarios capturing the implications of continent liabilities related to SOCB reform are also presented. However, given the delay in the compilation of a reliable estimate of the magnitude of SOCB recapitalization and reform costs, the portion which may eventually be borne by the government remains highly uncertain. In the absence of more definitive new information, the two indicative scenarios with contingent liabilities have been left virtually unchanged from the DSA contained in Country Report 06/22. [2]

Baseline (excluding contingent government liabilities)

The baseline is broadly consistent with the policies contained in the SEDP. Full implementation of the SEDP's public investment program over 2006 – 2010, together with a forecasted decline in international oil prices, would imply a steady increase in the overall deficit (IMF staff definition), [3] despite a sizeable fall in non-interest current expenditure.[4] However, the non-oil deficit would be placed on a path of rapid decline over the 2007-11 period. The baseline assumes that the nonoil deficit would continue to decline steadily thereafter, albeit at a somewhat slower pace. This implies that the overall fiscal deficit would begin to decline following Vietnam's graduation from low-income status at end-2010, as the need for public investment falls and non-interest current expenditure returns to its 2001 – 2005 average. The debt stock (excluding contingent liabilities) would rise by about 8½ percentage points of GDP between 2005 and 2011 under this scenario, peaking at about 54

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[1] This 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.

[2] Scenario I was slightly revised to account for the actual decline in credit growth in 2005 and the first half of 2006, and the assumed start date for the recapitalization process has been shifted by one year to 2007 for both scenarios.

[3] The assumed transfer in 2006 of the proceeds from a US$500 million (0.8 percent of GDP) sovereign bond issue in one lump sum payment for the purposes of on-lending to an SOE leads to a one-time decline in the overall deficit in 2007 relative to 2006, but the deficit reverts to a rising path thereafter.

[4] Non-interest current expenditure is assumed to decline by 2 percentage points of GDP over the period 2006–2010.

percent of GDP in 2016, when ODA already in the pipeline is assumed to dry up. The implied narrowing in the primary deficit from 2010 onwards would moderate the pace of increase in the debt ratio and eventually lead to a decline in the debt ratio to slightly below the authorities' notional debt ceiling of 50 percent of GDP by 2026. Under such conditions, the overall debt burden would remain manageable.

More specifically, the principal assumptions of the baseline are as follows: (i) continued high GDP growth of 7 – 7½ percent a year; (ii) government investment in line with the levels envisaged in the SEDP over the 2006-2010 period; (iii) a decline in non-interest current expenditure resulting from the authorities' planned phasing out of oil subsidies to oil traders by end-2008 and a slowdown in wage increases, (iv) a peaking of oil revenue at 9½-10 percent of GDP in 2006-07, followed by a steady decline to 6½ percent of GDP by 2011 and 6¼ percent of GDP by 2026, which reflects the projected decline in international oil prices, less favorable revenue sharing contracts on new fields, and a diversion of a growing share of output for domestic consumption as oil refining capacity comes on stream; (v) a steady decline in public investment (including net lending) from 13½ percent of GDP in 2006 to 11 ½ percent of GDP in 2011 and 9¼ percent of GDP by 2026; and (vi) an increasing shift in the composition of new borrowing from 2010 onward from ODA debt secured mostly on IDA terms to a blend in multilateral and bilateral lending as well as increasing sovereign bond issuance, all of which lead to a sharp decline in the concessionality of new borrowing.

Under these assumptions, the stock of total public debt would approach the authorities' notional debt ceiling[5] of 50 percent of GDP by 2010, and would remain on an upward trend through 2016, before beginning to decline thereafter as the primary deficit is sharply reduced. Although the ratio of the NPV of debt to GDP would reach a level of 50 percent of GDP by 2016, and the NPV of debt to revenue ratio would rise above 200 percent, the debt service burden would remain manageable.

However, the above scenario would be subject to significant risks. In particular, a failure to carry-out the envisaged adjustment in the primary balance, lower growth or lower-than-projected oil prices could result in significantly faster and larger increases in the public debt burden. More specifically, as is illustrated under alternative scenario A2, if the primary balance were to remain unchanged at its level as of 2006 (-6.3 percent of GDP), the NPV of debt-to-GDP ratio, the NPV of debt-to-revenue, and the debt-service-to-revenue ratios would rise sharply, and would reach levels of 83 percent, 354 percent, and 28 percent, respectively, by 2026. A permanently lower GDP growth rate (alternative baseline scenario A3) would also have a significant, albeit less dramatic effect on the dynamics of the NPV of debt relative to GDP and revenue.[6] Alternative baseline scenario A4 demonstrates the large

[5] The authorities' notional debt ceiling excludes DAF/VDB liabilities and municipal bonds, which are included in staffs' definition of public and publicly guaranteed debt.

[6] The magnitude of this shock is small due to the low historical variation in growth. Under the baseline scenario growth averages 7.2 percent over the period 2007 – 2026, while under the stress test, growth is reduced by only 0.3 percent per year and averages 6.9 percent over the period.

potential impact of a future decline in oil prices on fiscal revenues and public debt sustainability. A decline in international oil prices to the levels published in the April 2006 WEO would raise the overall deficit by 1.8 percent of GDP in 2007, with the impact declining to 1 percent of GDP per year from 2011 onwards. As a result, the NPV of the debt stock would rise by an additional 6 percentage points of GDP by end-2011, and would remain on a continually rising trend, reaching 63½ percent of GDP by end-2026. While the impact of the assumed decline in oil prices may seem less dramatic than that of an unchanged primary deficit, movements in the oil price represent an external shock which could require costly cut-backs in the government's public expenditure program to protect public debt sustainability.

Banking reform scenarios

The existence of contingent liabilities associated with SOCB reform is a major additional risk to medium-term sustainability. The two scenarios presented below, which are broadly unchanged from the 2005 DSA, should be viewed as indicative given the continued high degree of uncertainty regarding: (i) the current stock of NPLs in the banking system; and (ii) the current and projected future capital shortfalls, which depend on a number of difficult-to-predict policy variables. Both scenarios assume that the pace of banking sector reform is stepped up starting in 2007, while credit growth remains on the declining path observed in 2005 and the first half of 2006, decelerating to 15 percent per year by 2010. As a result, the incidence of new NPLs and associated provisioning requirements fall sharply over the medium term, and the SOCBs' capital shortfall is contained.

For simplicity, both scenarios assume that the entire capital shortfall will be financed by bond issuance,[7] and that the overall deficit will increase to accommodate any increase in the interest bill, so as not to force a compression of primary expenditure. The main differences between the scenarios include the magnitude of the capital shortfall and the time period over which recapitalization is spread.[8]

Banking reform scenario 1:

- Under this scenario, the end-2006 capital shortfall of 20 percent of GDP is assumed to be filled by a capital injection by the government, in the form of the transfer of government bonds to SOCBs, spread over two years (2007 and 2008). As a result, the debt stock jumps to 66½ percent of GDP by end-2008, peaks at around 67 ½ percent of GDP in 2010-11,and falls thereafter with the help of the continuing decline in the primary deficit and continued high real growth, to a level of about 53 percent of GDP over the long run.

[7] The authorities could also use equitization receipts or proceeds from as-yet unidentified asset sales to cover a part of the capital shortfall.

[8] For a complete discussion of the methodology, see Country Report 06/22, Annex V, pp. 52–55 and Country Report 05/148, Annex V, pp. 49–54.

Banking reform scenario 2:

- Under this scenario, the end-2006 capital shortfall amounts to 8 percent of GDP and is assumed to be filled by a capital injection by the government, spread over a period of 4 years. The debt stock would jump to 56½ percent of GDP by end-2010, peaking at 58½ percent of GDP in 2014, and declining moderately over the longer term to approach the authorities' notional debt ceiling by 2026.

The above indicative scenarios illustrate the important ways in which contingent liabilities can influence public debt dynamics. Going forward, a renewed acceleration in credit growth, delays in implementing bank reforms, and slow progress in improving the quality of new lending could all lead to further increases in contingent liabilities, the cost of which could have a significantly larger impact than is envisaged under the above scenarios. A sharp increase in the size of the required capital injection into the banking system could, in turn, pose a more serious 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 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.

External Debt Sustainability

The baseline scenario assumes that the authorities continue their current policy of setting an annual external borrowing limit, while maintaining the existing system of controls on capital flows. As a result, it could be viewed as a conservative external debt scenario for a country which can be expected to transition in the middle of the projection period from IDA-only to emerging-market status.

More specifically, the baseline scenario assumes: (i) a peak in IDA finance in 2010, followed by a slow tapering off and move toward a blended mix of multilateral and bilateral finance; (ii) a gradual decline in ODA-financed on-lending; (iii) a decline in the ratio of SOE external debt with government guarantee; (iv) continued robust growth in FDI; (v) net annual issuance of commercial sovereign bonds equivalent to 1 percent of GDP; and (v) a modest increase in private debt from about 5 percent of GDP in 2006 to 8½ percent of GDP over the long run.

Vietnam's external debt is deemed sustainable under the baseline scenario. The external debt stock would remain roughly flat through 2011 at 31 – 32 percent of GDP, as ODA and concessional financing would complement domestic financing, and would decline over the longer term to about 27 percent of GDP, as the steady decline in the primary deficit contains the overall size of the government's external borrowing requirement. The NPV of public and publicly guaranteed debt-to-exports ratio would decline throughout the period due to robust exports, falling to 18 percent by 2026, while the debt service ratio would rise slightly from 3.7 percent in 2006 to 4.7 percent by 2026, as the concessionality of new borrowing drops off.

While the current low NPV of debt in relation to exports makes it unlikely external finance would lead to external debt distress over the medium term, a number of risks that are not properly 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 fiscal adjustment. If the adjustment fails to materialize or is significantly postponed, external borrowing could be more extensive than assumed under the baseline and the external public debt dynamics less favorable. Second, as Vietnam's capital account is progressively opened up, and foreign investors' appetite for Vietnamese paper increases, the government could make increasing recourse to sovereign bond issues for purposes of on-lending to SOEs that face large capital needs. Additional risks, which could adversely affect external debt dynamics, include (i) a significantly faster than expected deterioration in the terms of new external financing, and (ii) a large depreciation of the dong.

Staff's Assessment

Staff considers Vietnam to be at low risk of external debt distress over the period 2006-2011. Vietnam's external debt ratios would remain below applicable policy-based debt thresholds under the baseline and under standard stress scenarios, provided that external borrowing policies will continue to be guided by the prudence that has characterized Vietnam's policies over the last few years.[9] However, the expansionary policies contained in the SEDP could pose risks to this relatively benign outlook in the event of a sharp decline in oil prices or if the fiscal adjustment assumed to take place from 2010 fails to materialize. The sensitivity tests and alternative scenarios suggest that the risks to medium-term external and public sector debt sustainability could be considerably larger than projected in the baseline over the long-term, warranting close monitoring.

[9] Vietnam is considered a "strong" performer on the basis of its 2005 CPIA score. Its applicable external debt thresholds are the following: (i) NPV of debt-to-exports = 200 percent, (ii) NPV of debt-to-GDP = 50 percent, and debt service-to-exports = 25 percent.

Table 1. Vietnam: Public Sector Debt - comparison of debt dynamics under various levels of contingent liabilities
(NPV of Debt-to-GDP Ratio)

	Estimate	Projections						
	2006	2007	2008	2009	2010	2011	2016	2026
Baseline Scenario: Excluding Contingent Liabilities								
Public and Publicly Guaranteed Debt in NPV	40.6	40.9	41.6	42.9	44.6	45.9	49.7	47.0
Memo: Public and publicly guaranteed debt in percent of GDP (in dong)	*45.5*	*46.0*	*46.9*	*48.3*	*49.9*	*51.3*	*54.3*	*49.4*
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	40.6	40.1	39.5	39.2	39.5	39.8	42.7	49.3
A2. Primary balance is unchanged from 2006	40.6	42.4	44.0	45.8	47.9	50.2	62.6	83.1
A3. Permanently lower GDP growth 1/	40.6	41.1	42.0	43.6	45.6	47.4	54.0	59.6
A4. Oil price at WEO Spring 2006 published baseline	40.6	42.5	44.5	46.9	49.4	51.7	59.6	63.5
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007 - 2008	40.6	41.9	44.0	46.0	48.3	50.2	56.7	57.5
B2. Primary balance is at historical average minus one standard deviations in 2007 - 2008	40.6	41.8	42.8	44.0	45.6	46.9	50.5	47.5
B3. Combination of B1-B2 using one half standard deviation shocks	40.6	41.2	41.7	43.0	44.6	46.0	49.7	47.0
B4. One-time 30 percent real depreciation in 2007	40.6	49.9	49.6	50.0	51.0	52.1	55.1	52.9
B5. 10 percent of GDP increase in other debt-creating flows in 2007	40.6	50.2	50.2	50.9	52.0	53.0	55.4	50.5
Scenario 1: Contingent Liabilities Equivalent to 20 percent of GDP end-2006 2/								
Public and Publicly Guaranteed Debt in NPV	40.6	51.1	61.2	61.6	62.1	62.3	60.3	50.8
Memo: Public and publicly guaranteed debt in percent of GDP (in dong)	*45.5*	*56.2*	*66.6*	*67.0*	*67.4*	*67.7*	*64.9*	*53.2*
Memo: of which debt creating flows from contingent liabilities in percent of GDP	0.0	10.2	10.8	1.5	1.2	0.8	0.0	0.0
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	40.6	50.3	59.2	58.0	57.2	56.3	53.3	53.1
A2. Primary balance is unchanged from 2006	40.6	52.6	63.6	64.4	65.4	66.6	73.2	86.9
A3. Permanently lower GDP growth 1/	40.6	51.3	61.8	62.4	63.3	64.0	64.9	63.7
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007 - 2008	40.6	52.3	64.3	65.2	66.3	67.1	67.6	61.5
B2. Primary balance is at historical average minus one standard deviations in 2007 - 2008	40.6	52.0	62.5	62.7	63.1	63.3	61.1	51.3
B3. Combination of B1-B2 using one half standard deviation shocks	40.6	51.5	61.7	62.0	62.5	62.6	60.5	51.0
B4. One-time 30 percent real depreciation in 2007	40.6	60.1	69.2	68.7	68.5	68.4	65.7	56.8
B5. 10 percent of GDP increase in other debt-creating flows in 2007	40.6	50.2	61.0	61.8	62.7	63.4	62.5	53.1
Scenario 2: Contingent Liabilities Equivalent to 8 percent of GDP								
Public and Publicly Guaranteed Debt in NPV	40.6	42.9	45.3	48.2	51.2	51.8	53.2	48.3
Memo: Public and publicly guaranteed debt in percent of GDP (in dong)	*45.5*	*48.0*	*50.7*	*53.6*	*56.5*	*57.2*	*57.8*	*50.7*
Memo: of which debt creating flows from contingent liabilities in percent of GDP	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	40.6	42.1	43.2	44.5	46.1	45.7	46.2	50.6
A2. Primary balance is unchanged from 2006	40.6	44.4	47.7	51.0	54.5	56.1	66.1	84.3
A3. Permanently lower GDP growth 1/	40.6	43.1	45.8	48.9	52.3	53.3	57.6	61.0
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007 - 2008	40.6	44.0	47.9	51.4	55.1	56.3	60.3	58.8
B2. Primary balance is at historical average minus one standard deviations in 2007 - 2008	40.6	43.8	46.5	49.3	52.2	52.8	54.0	48.8
B3. Combination of B1-B2 using one half standard deviation shocks	40.6	43.2	45.5	48.3	51.4	51.9	53.3	48.3
B4. One-time 30 percent real depreciation in 2007	40.6	51.9	53.3	55.3	57.6	57.9	58.6	54.2
B5. 10 percent of GDP increase in other debt-creating flows in 2007	40.6	50.2	52.2	54.6	57.3	57.7	58.2	51.6
Memorandum items:								
Real GDP growth	7.8	7.6	7.5	7.5	7.6	7.5	7.0	7.0
Primary balance	-5.4	-3.8	-4.3	-4.7	-4.6	-4.2	-2.5	-1.4
Overall balance								
Baseline	-6.3	-5.5	-6.1	-6.7	-6.8	-6.3	-4.8	-3.9
Scenario 1	-6.3	-5.5	-6.7	-7.7	-7.7	-7.2	-5.6	-4.3
Scenario 2	-6.3	-5.5	-6.3	-6.9	-7.1	-6.6	-5.1	-4.2
Nonoil balance								
Baseline	-16.1	-15.2	-14.6	-14.1	-13.2	-12.7	-11.2	-10.3
Scenario 1	-16.1	-15.2	-15.2	-15.1	-14.2	-13.6	-12.0	-10.7
Scenario 2	-16.1	-15.2	-14.8	-14.3	-13.5	-13.1	-11.6	-10.5
Average nominal interest rate on forex debt (in percent)	2.8	2.8	2.9	2.9	2.9	3.0	3.7	4.7
Average real interest rate on domestic currency debt (in percent)	-5.1	0.1	0.3	0.9	1.2	1.4	1.8	2.5

Sources: Country 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 the recapitalization is financed by bonds, over two years.

Table 1a.Vietnam: Public Sector Debt Sustainability Framework, Baseline Scenario, 2003-2026
(In percent of GDP, unless otherwise indicated)

	Actual					Estimate						Projections			
	2003	2004	2005	Historical Average 5/	Standard Deviation 5/	2006	2007	2008	2009	2010	2011	2006-11 Average	2016	2026	2012-26 Average
memo: nonoil deficit	-13.5	-10.7	-14.6			-16.1	-15.2	-14.6	-14.1	-13.2	-12.7	-14.3	-11.2	-10.3	-10.9
Public sector debt 1/	**40.8**	**42.7**	**43.7**			**45.5**	**46.0**	**46.9**	**48.3**	**49.9**	**51.3**		**54.3**	**49.4**	
o/w foreign-currency denominated	27.4	27.4	26.6			27.3	27.3	27.1	26.9	26.5	26.4		25.1	18.3	
Change in public sector debt	2.6	1.9	1.0			1.8	0.5	0.9	1.4	1.6	1.4		0.4	-0.6	
Identified debt-creating flows	2.0	-2.8	-0.2			0.9	0.2	0.7	1.2	1.1	1.3		-0.1	-0.7	
Primary deficit	5.4	1.8	5.0	2.7	2.0	5.4	3.8	4.3	4.7	4.6	4.2	4.5	2.5	1.4	2.2
Revenue and grants	24.9	26.7	25.9			26.8	26.8	25.6	24.6	23.7	23.6		23.5	23.4	
of which : grants	0.5	0.4	0.3			0.2	0.2	0.2	0.2	0.2	0.1		0.0	0.0	
Primary (noninterest) expenditure	30.3	28.5	31.0			32.2	30.5	29.9	29.3	28.4	27.9		26.1	24.9	
Automatic debt dynamics	-3.4	-4.6	-5.2			-4.5	-3.5	-3.6	-3.5	-3.5	-2.9		-2.7	-2.1	
Contribution from interest rate/growth differential	-2.5	-3.2	-3.9			-3.8	-3.0	-3.0	-2.9	-2.9	-2.9		-2.7	-2.1	
of which : contribution from average real interest rate	0.1	-0.2	-0.6			-0.6	0.2	0.2	0.4	0.5	0.5		0.9	1.2	
of which : contribution from real GDP growth	-2.6	-2.9	-3.3			-3.2	-3.2	-3.2	-3.3	-3.4	-3.5		-3.5	-3.3	
Contribution from real exchange rate depreciation	-0.9	-1.4	-1.3			-0.7	-0.5	-0.6	-0.6	-0.6	0.0		...	...	
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	0.6	4.7	1.2			0.9	0.3	0.2	0.2	0.5	0.1		0.6	0.1	
NPV of public sector debt	13.4	15.3	38.8			40.6	40.9	41.6	42.9	44.6	45.9		49.7	47.0	
o/w foreign-currency denominated	0.0	0.0	21.7			22.4	22.2	21.8	21.5	21.1	21.0		20.5	15.9	
o/w external	...	...	21.7			22.4	22.2	21.8	21.5	21.1	21.0		20.5	15.9	
NPV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	6.4	2.8	5.9			6.3	5.5	6.1	6.7	6.8	6.3		4.8	3.9	
NPV of public sector debt-to-revenue ratio (in percent) 3/	53.9	57.3	149.7			151.7	152.9	162.6	174.5	187.6	194.3		211.0	200.4	
o/w external	...	...	83.8			83.7	82.9	85.2	87.4	89.0	88.9		86.9	67.7	
Debt service-to-revenue ratio (in percent) 3/ 4/	4.2	3.8	3.2			3.4	6.6	7.2	8.2	8.9	8.6		9.5	10.6	
Primary deficit that stabilizes the debt-to-GDP ratio	2.8	-0.1	4.0			3.6	3.3	3.4	3.3	3.0	2.9		2.1	2.0	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.3	7.8	8.4	7.2	1.3	7.8	7.6	7.5	7.5	7.6	7.5	7.6	7.0	7.0	7.0
Average nominal interest rate on forex debt (in percent)	2.0	1.8	2.1	2.0	0.1	2.8	2.8	2.9	2.9	2.9	3.0	2.9	3.7	4.7	3.9
Average real interest rate on domestic currency debt (in percent)	-0.4	-2.9	-5.1	-1.9	4.0	-5.1	0.1	0.3	0.9	1.2	1.4	-0.2	1.8	2.5	2.0
Real exchange rate depreciation (in percent, + indicates depreciation)	-3.4	-5.7	-5.1	-0.6	4.5	-3.0	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	6.7	8.2	8.1	6.2	2.4	7.3	6.7	6.8	6.7	6.4	4.9	6.5	3.5	3.5	3.5
Growth of real primary spending (deflated by GDP deflator, in percent)	23.0	1.3	17.6	13.1	8.0	12.2	2.2	5.3	5.2	4.4	5.5	5.8	5.6	6.8	6.2
Grant element of new external borrowing (in percent)	...	...	...	...	...	20.1	23.8	22.7	20.2	19.5	18.0	20.7	10.5	2.6	9.2

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

1/ [Indicate coverage of public sector, e.g., general government or nonfinancial public sector. Also whether net or gross debt is used.]

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 including grants.

4/ Debt service is defined as the sum of interest and amortization of medium and long-term debt.

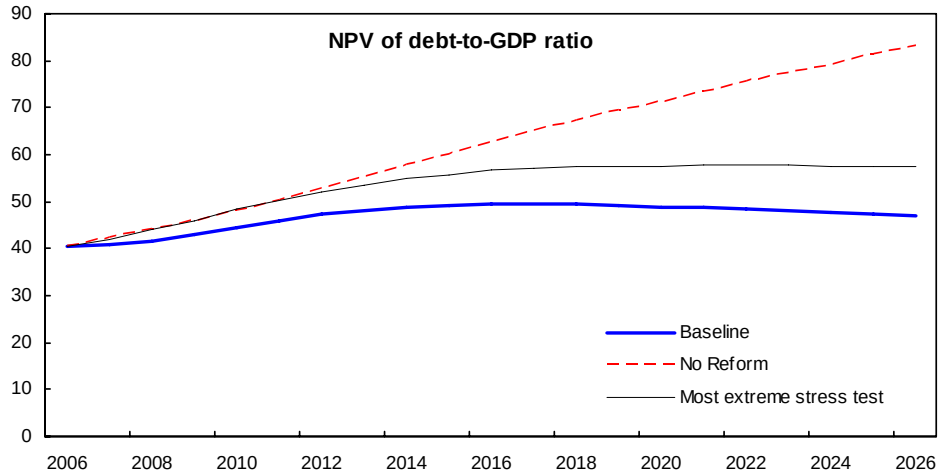
5/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

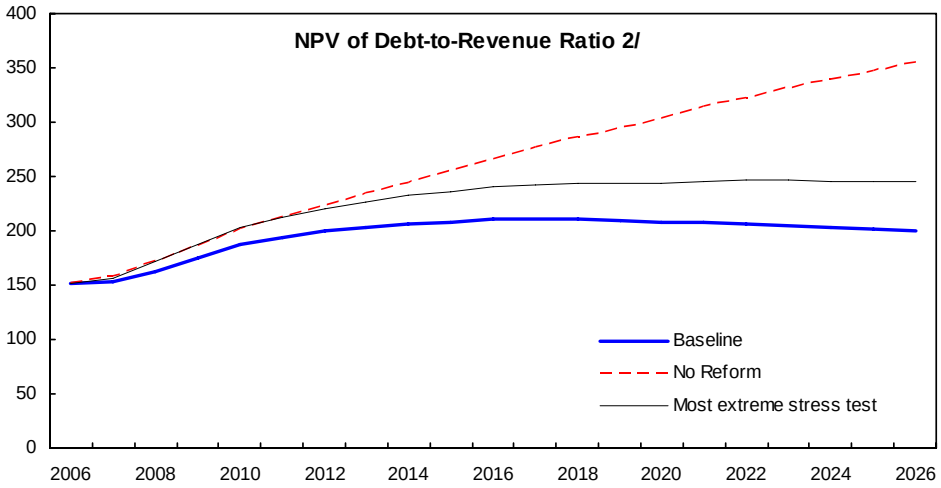
Table 2a.Vietnam: Sensitivity Analysis for Key Indicators of Public Debt 2006-2026

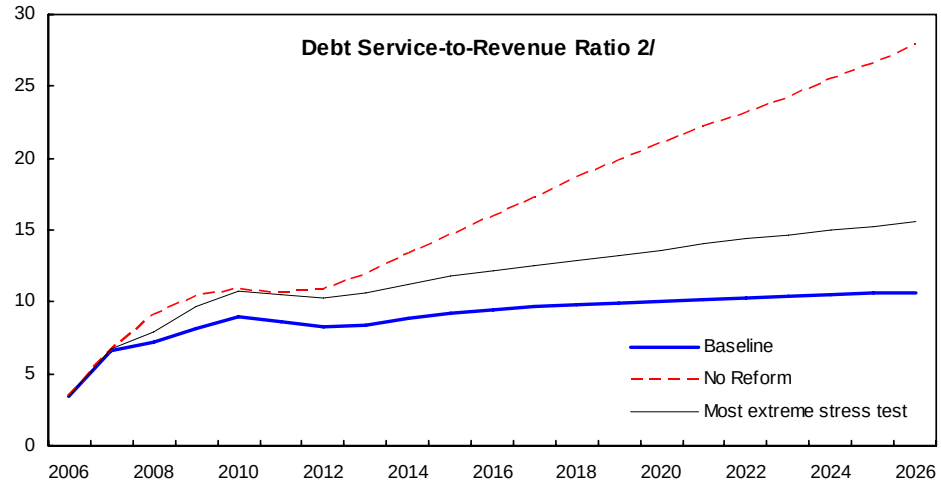
	Projections							
	2006	2007	2008	2009	2010	2011	2016	2026
NPV of Debt-to-GDP Ratio								
Baseline	41	41	42	43	45	46	50	47
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	41	40	39	39	39	40	43	49
A2. Primary balance is unchanged from 2006	41	42	44	46	48	50	63	83
A3. Permanently lower GDP growth 1/	41	41	42	44	46	47	54	60
A4. Oil price at WEO Spring 2006 published baseline	41	43	44	47	49	52	60	64
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007-2008	41	42	44	46	48	50	57	58
B2. Primary balance is at historical average minus one standard deviations in 2007-2008	41	42	43	44	46	47	50	47
B3. Combination of B1-B2 using one half standard deviation shocks	41	41	42	43	45	46	50	47
B4. One-time 30 percent real depreciation in 2007	41	50	50	50	51	52	55	53
B5. 10 percent of GDP increase in other debt-creating flows in 2007	41	50	50	51	52	53	55	51
NPV of Debt-to-Revenue Ratio 2/								
Baseline	152	153	163	174	188	194	211	200
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	152	150	154	159	166	168	181	210
A2. Primary balance is unchanged from 2006	152	159	172	186	202	212	266	354
A3. Permanently lower GDP growth 1/	152	154	164	177	192	201	229	254
A4. Oil price at WEO Spring 2006 published baseline	160	171	185	201	218	229	265	284
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007-2008	152	157	172	187	203	212	241	245
B2. Primary balance is at historical average minus one standard deviations in 2007-2008	152	156	167	179	192	199	214	203
B3. Combination of B1-B2 using one half standard deviation shocks	152	154	163	175	188	195	211	201
B4. One-time 30 percent real depreciation in 2007	152	187	194	204	215	220	234	226
B5. 10 percent of GDP increase in other debt-creating flows in 2007	152	188	196	207	219	224	236	216
Debt Service-to-Revenue Ratio 2/								
Baseline	3	7	7	8	9	9	9	11
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	3	7	6	6	5	4	7	11
A2. Primary balance is unchanged from 2006	3	7	9	10	11	11	16	28
A3. Permanently lower GDP growth 1/	3	7	7	8	9	9	11	16
A4. Oil price at WEO Spring 2006 published baseline	4	7	8	10	11	11	13	16
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007-2008	3	7	8	10	11	11	12	16
B2. Primary balance is at historical average minus one standard deviations in 2007-2008	3	7	8	9	9	9	10	11
B3. Combination of B1-B2 using one half standard deviation shocks	3	7	7	7	9	8	9	10
B4. One-time 30 percent real depreciation in 2007	3	7	9	10	11	11	12	14
B5. 10 percent of GDP increase in other debt-creating flows in 2007	3	7	20	13	12	11	11	13

Sources: Country 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 1a. Vietnam: Indicators of Public Debt Under Alternative Scenarios, 2006-2026 1/







Source: Staff projections and simulations.
1/ Most extreme stress test is test that yields highest ratio in 2016.
2/ Revenue including grants.

Table 3a. Vietnam: External Debt Sustainability Framework, Baseline Scenario, 2006-2026 1/
(In percent of GDP, unless otherwise indicated)

	Actual		Historical Average 6/	Standard Deviation 6/	Projections									
	2004	2005			2006	2007	2008	2009	2010	2011	2006-11 Average	2016	2026	2012-26 Average
External debt (nominal) 1/	**33.9**	**32.5**			**32.6**	**32.1**	**31.5**	**31.2**	**30.9**	**30.8**		**30.6**	**26.8**	
o/w public and publicly guaranteed (PPG)	27.6	26.8			27.5	27.5	27.4	27.2	26.9	26.8		25.6	18.8	
Change in external debt	0.2	-1.4			0.1	-0.5	-0.6	-0.3	-0.3	-0.1		0.4	-0.3	
Identified net debt-creating flows	-4.1	-7.4			-4.9	-4.1	-2.8	-1.4	-1.3	-1.3		-1.0	-1.1	
Non-interest current account deficit	**2.4**	**-1.0**	**0.1**	**3.7**	**-1.3**	**-0.5**	**0.7**	**2.0**	**2.0**	**1.9**		**1.7**	**1.6**	1.7
Deficit in balance of goods and services	6.5	3.8			2.9	4.1	5.3	6.6	6.8	6.6		4.9	3.4	
Exports	68.1	69.3			72.5	74.6	75.9	77.0	78.1	80.6		91.6	86.8	
Imports	74.6	73.1			75.4	78.7	81.2	83.6	84.9	87.2		96.5	90.2	
Net current transfers (negative = inflow)	-5.5	-6.4	-4.8	1.0	-6.1	-5.9	-5.8	-5.7	-5.4	-5.2		-3.8	-1.9	-3.2
Other current account flows (negative = net inflow)	1.4	1.6			1.9	1.4	1.2	1.1	0.7	0.6		0.6	0.2	
Net FDI (negative = inflow)	**-2.8**	**-2.5**	**-3.5**	**0.9**	**-2.4**	**-2.6**	**-2.5**	**-2.5**	**-2.4**	**-2.4**		**-2.2**	**-2.4**	-2.3
Endogenous debt dynamics 2/	**-3.7**	**-3.9**			**-1.2**	**-1.0**	**-0.9**	**-0.8**	**-0.8**	**-0.8**		**-0.5**	**-0.3**	
Contribution from nominal interest rate	0.7	0.9			1.1	1.2	1.2	1.3	1.3	1.3		1.4	1.4	
Contribution from real GDP growth	-2.3	-2.5			-2.2	-2.2	-2.2	-2.1	-2.1	-2.1		-1.9	-1.7	
Contribution from price and exchange rate changes	-2.1	-2.3			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**4.3**	**6.0**			**5.0**	**3.6**	**2.2**	**1.1**	**0.9**	**1.2**		**1.4**	**0.8**	
o/w exceptional financing	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/	...	27.4			27.4	26.7	25.9	25.5	25.1	25.0		25.5	23.9	
In percent of exports	...	39.5			37.9	35.8	34.0	33.1	32.2	31.0		27.8	27.5	
NPV of PPG external debt	**...**	**21.7**			**22.4**	**22.2**	**21.8**	**21.5**	**21.1**	**21.0**		**20.4**	**15.9**	
In percent of exports	...	31.3			30.9	29.7	28.7	27.9	27.1	26.1		22.3	18.3	
Debt service-to-exports ratio (in percent)	5.9	5.5			5.6	5.8	5.9	5.4	5.7	5.9		6.3	7.2	
PPG debt service-to-exports ratio (in percent)	3.8	3.6			3.7	3.8	3.7	3.8	4.1	4.4		4.8	4.7	
Total gross financing need (billions of U.S. dollars)	1.8	0.4			0.5	1.2	2.4	3.6	4.5	5.5		10.2	25.3	
Non-interest current account deficit that stabilizes debt ratio	2.2	0.4			-1.4	0.0	1.3	2.2	2.3	2.0		1.3	1.9	
Key macroeconomic assumptions														
Real GDP growth (in percent)	7.8	8.4	7.2	1.3	7.8	7.6	7.5	7.5	7.6	7.5	7.6	7.0	7.0	7.0
GDP deflator in US dollar terms (change in percent)	6.6	7.2	2.5	4.3	5.9	4.5	4.4	4.5	4.3	2.4	4.3	2.0	2.0	1.9
Effective interest rate (percent) 5/	2.4	2.9	3.0	0.5	3.7	4.2	4.4	4.5	4.6	4.6	4.3	5.2	5.7	5.3
Growth of exports of G&S (US dollar terms, in percent)	32.0	18.3	17.4	10.1	19.5	15.7	14.3	13.9	13.8	13.6	15.1	10.7	7.0	9.6
Growth of imports of G&S (US dollar terms, in percent)	26.7	14.0	14.4	11.9	17.7	17.4	15.9	15.6	14.0	13.0	15.6	10.3	7.2	9.3
Grant element of new public sector borrowing (in percent)	...	...	...	...	20.1	23.8	22.7	20.2	19.5	18.0	20.7	10.5	2.6	9.2
Memorandym item:														
Nominal GDP (billions of US dollars)	45.4	52.8			60.4	67.8	76.2	85.6	96.1	105.7		162.2	389.4	

Source: Staff simulations.

1/ Includes both public and private sector external debt.
2/ Derived as [r - g - ρ(1+g)]/(1+g+ρ+gρ) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and ρ = 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 devided by previous period debt stock.
6/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

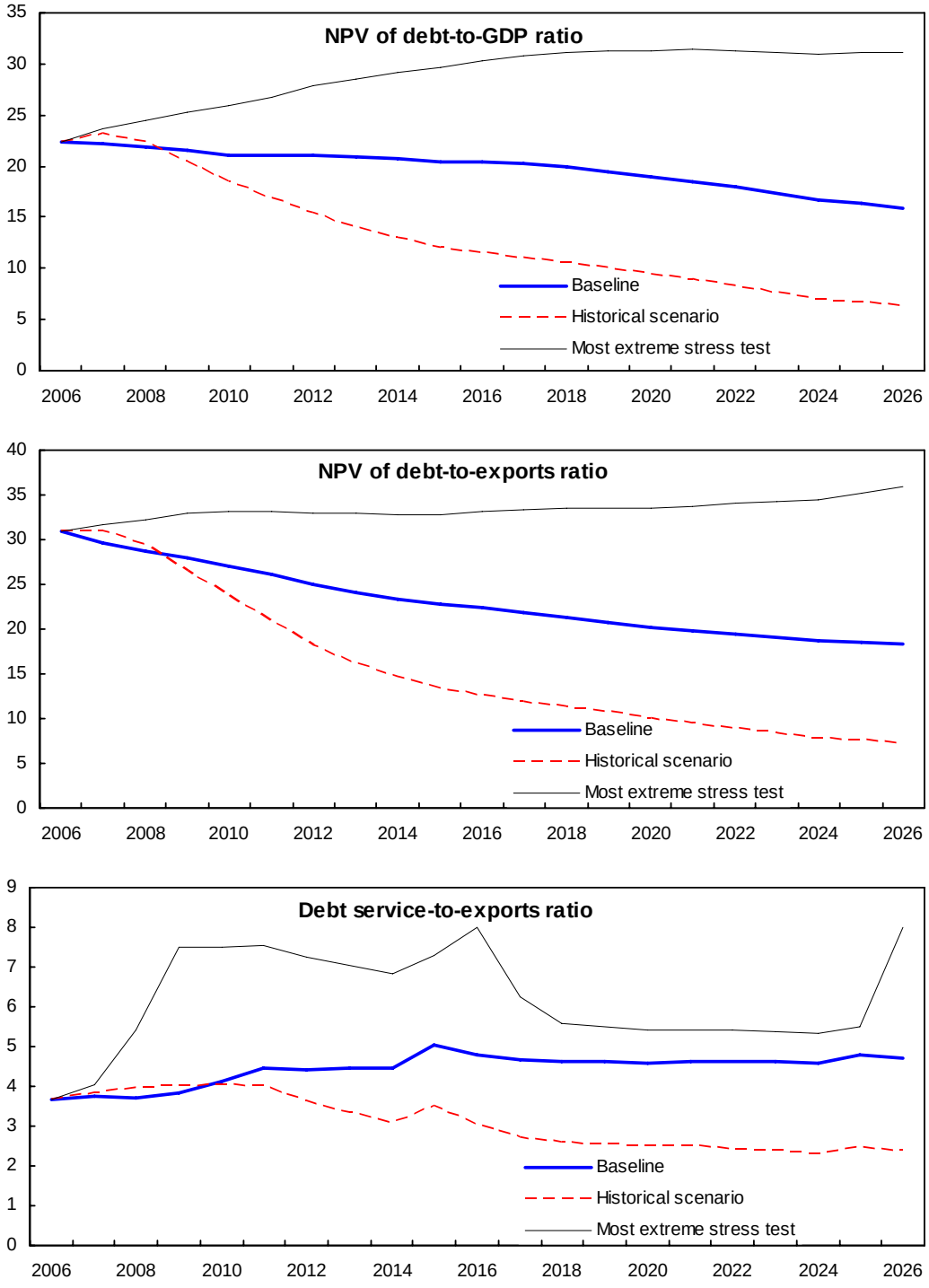
Table 3b. Vietnam: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2006-26
(In percent)

	Projections							
	2006	2007	2008	2009	2010	2011	2016	2026
NPV of debt-to-GDP ratio								
Baseline	22	22	22	21	21	21	20	16
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2007-26 1/	22	23	22	20	19	17	12	6
A2. New public sector loans on less favorable terms in 2007-26 2/	22	24	24	25	26	27	30	31
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2007-08	22	23	22	22	22	22	21	16
B2. Export value growth at historical average minus one standard deviation in 2007-08 3/	22	28	36	33	31	29	22	16
B3. US dollar GDP deflator at historical average minus one standard deviation in 2007-08	22	24	25	24	24	24	23	18
B4. Net non-debt creating flows at historical average minus one standard deviation in 2007-08 4/	22	24	26	25	24	23	21	16
B5. Combination of B1-B4 using one-half standard deviation shocks	22	27	34	32	30	28	24	18
B6. One-time 30 percent nominal depreciation relative to the baseline in 2007 5/	22	31	31	30	30	29	29	22
NPV of debt-to-exports ratio								
Baseline	31	30	29	28	27	26	22	18
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2007-26 1/	31	31	29	27	24	21	13	7
A2. New public sector loans on less favorable terms in 2007-26 2/	31	32	32	33	33	33	33	36
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2007-08	31	30	29	28	27	26	22	18
B2. Export value growth at historical average minus one standard deviation in 2007-08 3/	31	40	54	50	45	41	27	21
B3. US dollar GDP deflator at historical average minus one standard deviation in 2007-08	31	30	29	28	27	26	22	18
B4. Net non-debt creating flows at historical average minus one standard deviation in 2007-08 4/	31	33	34	32	30	29	23	18
B5. Combination of B1-B4 using one-half standard deviation shocks	31	36	42	39	36	33	24	19
B6. One-time 30 percent nominal depreciation relative to the baseline in 2007 5/	31	30	29	28	27	26	22	18
Debt service ratio								
Baseline	4	4	4	4	4	4	5	5
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2007-26 1/	4	4	4	4	4	4	3	2
A2. New public sector loans on less favorable terms in 2007-26 2/	4	4	4	4	4	4	5	7
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2007-08	4	4	4	4	4	4	5	5
B2. Export value growth at historical average minus one standard deviation in 2007-08 3/	4	4	5	7	7	8	8	8
B3. US dollar GDP deflator at historical average minus one standard deviation in 2007-08	4	4	4	4	4	4	5	5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2007-08 4/	4	4	4	5	5	5	5	5
B5. Combination of B1-B4 using one-half standard deviation shocks	4	4	4	5	5	5	5	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2007 5/	4	4	4	4	4	4	5	5
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	1	1	1	1	1	0	0	0

Source: 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 (implicitly assuming 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, 2006-2026
(In percent)



Source: Staff projections and simulations.
1/ Most extreme stress test is test that yields highest ratio in 2016.