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VIETNAM

Joint World Bank/IMF Debt Sustainability Analysis 2010[1]

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

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This document presents the joint World Bank-IMF Bank debt sustainability analysis (DSA) for Vietnam using the Debt Sustainability Framework for Low-Income Countries (LIC).[2] Vietnam remains at low risk of debt distress, although the debt indicators have deteriorated due to the negative impact of the global crisis and the increased macroeconomic risks since late 2008.[3] Under the baseline scenario, all external debt sustainability indicators are projected to remain well below their applicable debt thresholds. Under the standard sensitivity analysis, only one indicator (the present value (PV) of debt-to-GDP) breaches its

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[1] This DSA was prepared jointly by the World Bank and IMF. The staffs also consulted with the Asian Development Bank. The debt data underlying this exercise were provided by the Vietnamese authorities and donor partners. Data beyond end-2009 are staffs projections.

[2] See "Debt Sustainability in Low-Income Countries: Proposal for an Operational Framework and Policy Implications" (http://siteresources.worldbank.org/INTDEBTDEPT/PublicationsAndReports/20261908/debtSust-complete%20paper.pdf, 2/3/04 and www.imf.org/external/np/pdr/sustain/2004/020304.htm), "Debt Sustainability in Low-Income Countries: Further Considerations on an Operational Framework, Policy Implications" (http://siteresources.worldbank.org/INTDEBTDEPT/PolicyPapers/20279458/DSfullpapersept.pdfand www.imf.org/external/np/pdr/sustain/2004/091004.htm), and reference to "Staff Guidance Note on the Application of the Joint Bank-Fund Debt Sustainability Framework for Low-Income Countries" (http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTDEBTDEPT/0,,contentMDK:22482307~menuPK:64166739~pagePK:64166689~piPK:64166646~theSitePK:469043~isCURL:Y,00.html and http://www.imf.org/external/pp/longres.aspx?id=4419).

[3] Vietnam's policies and institutions, as measured by the World Bank's Country Policy and Institutional Assessment (CPIA), averaged 3.8 over the past three years, placing it as a "strong performer." The relevant indicative thresholds for this category are: 50 percent for the PV of debt-to-GDP ratio, 200 percent for the PV of debt-to-exports ratio, 300 percent for the PV of debt-to-revenue ratio, 25 percent for the debt service-to-exports ratio, and 35 percent for the debt service-to-revenue ratio. These thresholds are applicable to public and publicly-guaranteed external debt.

threshold marginally and very briefly. The outlook for public sector debt (including domestic debt) is less favorable and hinges on the authorities' ability to (a) substantially narrow the fiscal deficit from the stimulus-induced high of 2009, and (b) consistently issue long-term local currency debt at market-determined yields acceptable to the authorities.

I. Background and Baseline Assumptions

1. **Vietnam's external debt position has historically been robust, but has been negatively affected by the global crisis and domestic macroeconomic instability since late 2008.** Most of Vietnam's external debt is concessional with long maturity and a fairly diversified currency composition.[4] Vietnam has access to large foreign direct investment (FDI) inflows, providing significant nondebt-creating financing. However, the recent global crisis led to an economic slowdown and declines in exports and imports, remittances, and FDI. The stimulus measures helped support GDP growth in 2009, but resulted in significant widening in trade deficit which, in turn, contributed to a loss of confidence in the currency. Large private capital outflows (as domestic residents switched their dong-denominated assets into foreign currency-denominated assets or gold) led to severe loss in international reserves, and finally depreciations of the exchange rate. As a result, Vietnam's total external debt (including the private sector) increased by 7 percentage points to 40¾ percent of GDP by end-2009,[5] and the PPG external debt increased by 4 percentage points to 30½ percent of GDP by end-2009.

Public and Publicly-Guaranteed External Debt at End-2009 by Main Creditors
(In percent of GDP)

Creditors	Debt Holdings
Multilaterals	
The IMF	0.1
The World Bank	7.0
The Asian Development Bank	4.1
Other	0.5
Bilaterals	
Japan International Cooperation Agency	9.3
Other	5.5
Commercial	4.2
Total	30.6

Sources: Vietnamese authorities; and staff estimates.

2. **Domestic public debt[6] has historically been manageable, although risks have increased with recent macroeconomic instability.** Public sector debt in this analysis refers

[4] Information on Vietnam's creditors can be found in the Ministry of Finance's External Debt Bulletin at www.mof.gov.vn.

[5] In this analysis, all external debt and debt service ratios are calculated using the interbank exchange rate, which is the "effective" exchange rate. The authorities calculate external debt ratios using the official exchange rate, according to which the total external debt (including private sector) is about 39½ percent of GDP by end-2009.

[6] Public sector debt in this analysis is in gross terms.

to debt of the general government and debt guaranteed by the central government. Debts of the state-owned enterprises (SOEs) not guaranteed by the government are excluded from public sector debt (except Vietnam Development Bank (VDB), whose nonsecuritized domestic debts are also included in the public sector debt) due to data limitations. Vietnam's domestic public debt has remained at around 17–18 percent of GDP over the past three years. Domestic financing needs have traditionally been met comfortably through borrowing at low or negative real interest rates from captive banks and other quasi-government entities. However, with financing needs rising sharply due to economic expansion and the recent stimulus, these sources have been pressured, while issuance of marketable securities remains constrained by the authorities' unwillingness to pay the market clearing interest rate.

3. **The assessment of Vietnam's debt situation has not changed significantly since the last DSA, despite a higher level of debt than projected previously.** The PPG external debt increased for about 4 percentage points of GDP from 2008 to 2009 in nominal terms, and the PV of public and publicly-guaranteed (PPG) external debt in 2009 is about 9 percentage points higher than projected in the last DSA. Although the GDP growth, noninterest current account deficit, FDI, and aid inflows in 2009 were better than, or close to, the projections in the last DSA, large private capital outflows (mostly reflected in the errors and omissions, amounting to about 13 percent of GDP) led to an increase in debt-creating flows beyond the identified financing gap (the unidentified debt-creating flows are recorded as "residual" in the DSA summary tables). The "residual" explains about 7 percentage points of the increase in the PV of PPG external debt in 2009 relative to the last DSA, while the change in discount factor from 5 percent to 4 percent in the template explains the remaining 2 percentage points. Domestic financing of the government deficit is estimated to have soared above 5 percent of GDP in 2009, in line with the fiscal stimulus. About half of this financing was obtained via drawdown of government deposits; the rest

Public and Publicly-Guaranteed External Debt by End-2009: Projections in the Previous DSA vs. Actual Data
(In percent of GDP)

	Previous DSA	Current DSA
External debt (nominal)	31.9	40.7
Of which: Public and publicly-guaranteed (PPG)	26.0	30.6
Identified net debt-creating flows	3.3	0.3
Noninterest current account deficit	7.0	7.1
Net FDI (negative = inflow)	-3.4	-6.8
Endogenous debt dynamics	-0.3	0.0
Residual	-1.1	6.9
PV of PPG external debt	18.0	26.7
PPG debt service-to-exports ratio (in percent)	1.4	2.0
PPG debt service-to-revenue ratio (in percent) 1/	3.7	5.2
Real GDP growth (in percent)	4.8	5.3
GDP deflator in U.S. dollar terms (change in percent)	-3.9	-2.0
Effective interest rate (in percent)	3.7	3.3
Growth of exports of G&S (in U.S. dollar terms, in percent)	-15.2	-9.8
Growth of imports of G&S (in U.S. dollar terms, in percent)	-19.3	-13.3
Government revenues (excluding grants, in percent of GDP	23.8	26.3
Aid flows (in billions of U.S. dollars)	1.6	4.0
Of which: Grants	0.2	0.4
Of which: Concessional loans	1.7	3.6
Memorandum items:		
Nominal GDP (in billions of U.S. dollars)	90.6	93.2
Nominal dollar GDP growth	0.8	3.2
PV of PPG external debt (in billions of U.S. dollars)	16.3	23.9

Sources: Vietnamese authorities; and staff estimates.
1/ Revenue excludes grants.

came in the form of nonmarket loans from Vietnam Social Security Fund, State Capital Investment Corporation (SCIC), and the banking system.[7]

4. **The main baseline assumptions underlying the DSA are summarized in Box 1.** A critical assumption is that Vietnam will continue to pursue sound macroeconomic and financial policies and press ahead with structural reforms to maintain macroeconomic stability, support growth, and reduce poverty. Based on these assumptions, GDP growth is expected to accelerate to 6½ percent in 2010 and to 7½ percent in 2015, underpinned by buoyant private investment, consumption, and non-oil exports. As exports and remittances rebound and imports are contained by prudent monetary policy and fiscal consolidation, the noninterest current account deficit is projected to gradually decline from about 7 percent of GDP in 2009 to 3½ percent in 2015, further down to 2¼ percent in 2020, and finally reverse into a small surplus by 2030. As investors' confidence restores, FDI and portfolio inflows are expected to recover, official development assistance (ODA) is projected to pick up in the near term, in line with donors' commitment in the last Consultative Group (CG) meeting. Reserve coverage is expected to improve from about 2 months by end-2009 to about 3 months by 2015 and to about 3½ months by end-2030.[8] The primary fiscal deficit is projected to decline from 7½ percent of GDP in 2009 to 2½ of GDP in 2010–15, as non-oil revenues recover, stimulus-related surge in investment spending unwinds, and other investment expenditures consolidate, consistent with the earlier government announcements in the context of the five-year financial plan accompanying the 2011–15 Social Economic Development Plan (SEDP). In the longer term, the primary fiscal deficit is expected to continue declining gradually and reach about 1 percent of GDP at the end of the projection horizon.

II. External Debt Sustainability Analysis[9]

5. **PPG external debt is likely to remain manageable, despite the deterioration of the debt indicators relative to the last DSA.** The PV of PPG external debt stock by end-2009 reached about 27 percent of GDP. Although the ratio is higher than projected in the last DSA, it remains much lower than the threshold of 50 percent of GDP. Other PPG external debt and debt service indicators also remain well below the applicable debt thresholds, suggesting that Vietnam's current PPG external debt position is likely to be manageable.

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[7] Includes a claim of 0.6 percent of GDP in respect of State Bank of Vietnam's payment of the interest subsidy cost.

[8] Increases in GIR are reflected as positive "residuals" in the DSA summary tables. In outer years, as import-to-GDP ratio increases, an improvement in reserve coverage relative to prospective imports leads to a gradual increase in "residuals" (in percent of GDP).

[9] This analysis focuses on PPG external debt, which accounts for more than 80 percent of total external debt. Private external debt is largely associated with foreign-invested projects, and hence is more self-sustainable.

Box 1: Key Macroeconomic Assumptions for Baseline Scenario (2010–30)

Real GDP growth is projected to be 6½ percent for 2010 and to gradually increase to about 7½ percent in 2015. Real GDP growth will average at about 7 percent per year during 2010–15 (below the 10-year historical average of 7.3 percent). It will thereafter remain at 7½ percent for a decade and then decline slightly, as Vietnam's level of development and demography begins to converge to those of more advanced neighbors.

Inflation is projected to increase from 6¾ percent in 2009 to 10½ percent in 2010 as economic activities recover and commodity and food prices rise. Inflation will then gradually decline to 5 percent in 2015 and will remain at that level through 2020. Thereafter, a further decline is assumed reflecting productivity gains.

The current account deficit is projected to narrow from 10¾ percent of GDP in 2009 (excluding gold re-exports) to 9 percent of GDP in 2010. It will gradually narrow to about 4½ percent in 2015 as exports and remittances pick up in line with the global recovery. In the longer term, as the main exports shift toward higher value-added products, current account deficit will gradually narrow and will finally reverse into a very small surplus in 2030. As Vietnam continues high growth in the longer term, remittances (whose growth tends to be in line with the GDP growth rate in the U.S., the largest source country of remittances to Vietnam) as a share of GDP will decline from 6½ percent of GDP in 2009 to 4 percent in 2030.

The financial account surplus will fall from about 12 percent of GDP in 2009 to 9 percent in 2015 and remain at that level throughout the projection horizon. The nondebt-creating part of FDI will decrease from about 7 percent of GDP in 2009 to about 3 percent in 2030. Concessional official development assistance is assumed to decline from US$3.6 billion in 2009 to about US$1.1 billion by 2030. Commercial borrowing, on the other hand, is projected to increase from about 29 percent of total PPG external borrowing to about 92 percent in 2030.

The reserve coverage is likely to remain low at about 2 months of prospected imports by end-2010, but will gradually recover to about 3 months by end-2015 and increase further to 3½ months by end-2030.

Effective interest rates on foreign borrowing will gradually increase from around 3.3 percent in 2009 to above 4.1 percent by 2030, as the share of concessional loans in total debt gradually declines.

The overall fiscal deficit (including off-budget expenditure and onlending; but excluding VDB net lending) will moderate from 8.9 percent of GDP in 2009 to 3.3 percent of GDP by 2015 and stabilize at about 3 percent of GDP in the long run (correspondingly, the primary deficit is projected to narrow from 7½ percent of GDP in 2009 to 1¾ percent of GDP). The adjustment will be frontloaded, in line with an unwinding of the 2009 stimulus-related surge in investment spending, so that the deficit will narrow to below 6 percent of GDP by 2010. Of the remaining 2½ percentage point of GDP fiscal effort in 2011–15, four-fifths will come from the expenditure side, considering Vietnam's high expenditure ratio. Although aggregate revenues will rise by only ½ percentage point of GDP (to 27½ percent of GDP in 2015), non-oil domestic revenues will rise by 1½ percentage points of GDP to offset the decline in oil revenues, import tariffs and grants. As such the implied improvement in the non-oil primary balance (share of GDP) is about 3 percent of GDP.

Net domestic financing (NDF) is expected to decline through 2013 (to 0.3 percent of GDP), due to the expected increase in ODA disbursements in the coming two years as donors committed in last year's CG meeting, coupled with the assumed fiscal adjustment. However, the financing mix will shift toward domestic sources after that, and NDF will rise to 1.7 percent and 2.1 percent of GDP in 2015 and 2016–30, respectively. The net domestic financing figures mask somewhat the bulge in gross issuance requirements arising from the increase in domestic bond redemptions to 1¼ percent of GDP (annually) during 2010–12.

Contingent liabilities or exceptional financing items are not assumed.

6. **Under the baseline scenario, the PV of PPG external debt and debt service are projected to initially rise in relation to GDP, exports, and government revenue, followed by a decline over the longer term.** In terms of averages over the whole projection period, the PV of PPG external debt ratios are expected to decrease relative to the ratios in 2009, while the debt service-to exports ratio is projected to remain flat, and the debt service-to-revenue ratio is projected to be higher as an average between 2010 and 2030 relative to 2009, reflecting a shift toward more commercial borrowing in PPG external debt. With remittances included in the denominator of debt indicator calculations, the above results hold as well.

Policy-Based Public and Publicly-Guaranteed External Debt Burden Thresholds for Vietnam

	Thresholds	Vietnam's Ratios	
		2009	2010–30 1/
PV of debt in percent of:			
GDP	50	27	23
Exports	200	40	24
Revenues	300	101	88
Debt service in percent of:			
Exports	25	2	2
Revenues	35	5	9

Sources: Vietnamese authorities; and staff estimates.
1/ Average for the period, under the baseline scenario.

7. **Stress tests indicate that the PV of PPG external debt is most sensitive to a loss of access to nondebt-creating flows and a slowdown in exports.** The most extreme stress test—defined as the test that triggers the highest debt ratio in 2020—is a combination shock.[10] Under such a shock, the PV of PPG external debt in relation to GDP would breach the threshold in 2012 and 2013 (at 51 percent of GDP) before trending down below the threshold. Within the combination shock, a loss of access to nondebt-creating flows and a slowdown in exports seem to play the most important roles. The vulnerability of the debt dynamics vis-à-vis export proceeds can also be seen by the marginal breach of the PV of external debt-to-GDP for two consecutive years when export performance is weaker than expected. The results should however be downplayed as the standard assumptions[11] for the combination shock and export shock tend to be severe and are unlikely to materialize. Similarly, other PPG external debt indicators are most sensitive to the combination shock and the export shock, but they remain well below the applicable thresholds even under the most extreme stress tests. Results remain the same when remittances are included in the denominator of debt indicator calculations.

[10] A combination shock assumes: (i) real GDP growth at historical average minus one-half standard deviation in 2011–12; (ii) export value growth at historical average minus one-half standard deviation in 2011–12; (iii) U.S. dollar GDP deflator at historical average minus one-half standard deviation in 2011–12; and (iv) net nondebt-creating flows at historical average minus one-half standard deviation in 2011–12.

[11] Including the assumption pertaining to the borrowing terms of the residual financing induced by the shocks (i.e., the average grant element is -5 percent).

III. Public Debt Sustainability Analysis

8. **The current and medium-term public debt indicators have worsened somewhat relative to the previous DSA.** The PV of public sector debt at end-2009 is estimated at 45 percent of GDP, 5 percentage points above the previous DSA baseline projection; the debt service-to-revenue ratio (revenues excluding grants) during 2010–15 is also about 3–4 percentage points of GDP higher than projected. The nominal debt-to-GDP ratio (49 percent of GDP at end-2009) is similarly projected to peak at over 51.3 percent of GDP in 2010 (rather than at 50.8 percent in 2012), before falling to 48 percent of GDP by 2015.

9. **These trends largely reflect the fiscal expansion implemented in the context of the global economic crisis.** The stimulus measures (estimated to have cost over 5 percent of GDP in net terms), particularly the hike in investment spending, pushed the 2009 overall deficit to almost 9 percent of GDP. Although the stimulus package did support growth (ceteris paribus, the debt ratio fell by 2.2 percentage points of GDP due to nominal growth) and much of it was financed domestically (including 2½ percent of GDP via nondebt increasing deposit drawdown), the concomitant increase in foreign currency borrowing and commitments (both concessional and commercial) through 2012, and the aggravating effect of exchange rate depreciations in 2009 and early 2010, contributed to an increase in debt.[12]

10. **The standard stress tests indicate the importance of reining in public finances over the medium term.** A perpetuation of the 2009 fiscal deficit level would be unsustainable, and would push the PV of debt to near 60 percent of GDP by 2015. A less ambitious adjustment than assumed in the baseline may not provide a sufficient hedge against a large exchange rate shock. As shown in one stress test, a one-time 30 percent real depreciation in 2011 could push debt near 60 percent of GDP in one year, given that more than 60 percent of public sector debt is denominated in foreign currency by end-2009. Against this backdrop, the authorities' plans to undertake spending-led, medium-term fiscal adjustment in the context of the SEDP 2011–15, as well as impose ceilings on nominal public and external debt at 50 percent of GDP, are steps in the right direction.[13] Over time, and consistent with the DSA results, a sufficiently prudent fiscal policy would deliver debt

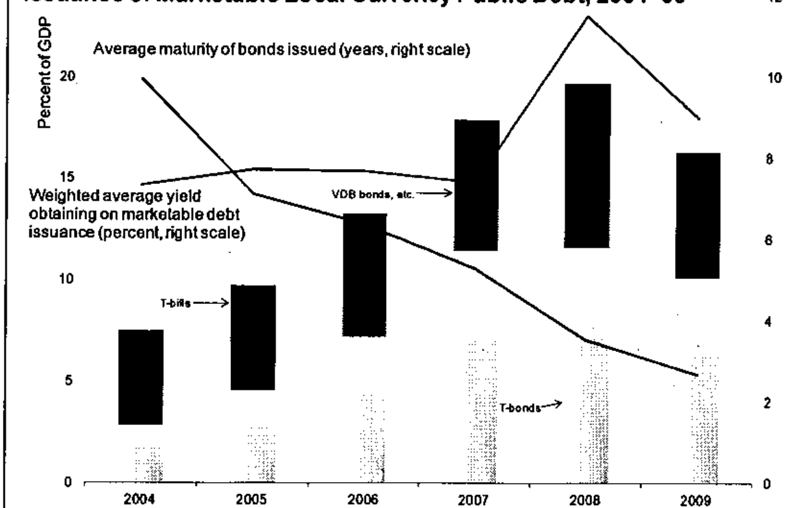
[12] On the concessional side, official loan disbursements will increase from about US$1.5 billion a year during 2005–08 to about US$2 billion (on average) a year in 2009–12 before moderating to about US$1.2 billion a year during 2013–15. A significant part of this increase was motivated by the desire to help the government fund its stimulus package for 2009–10 (as well as bridge the induced external deficits). On the commercial side, Vietnam issued a 6.9 percent 10-year bullet repayment sovereign bond of US$1billion in January 2010 (about 1 percent of GDP). This is the country's second sovereign bond; the first was issued in 2005 also as a 10-year bond, but in the amount of US$750 million. In addition, the government issued about 0.5 percent of GDP in shorter-term foreign currency denominated domestic bonds in 2009 (maturing before 2012).

[13] Under the authorities' definition, which excludes certain banking system claims and implicitly guaranteed debt of the VDB, and converts external debt at official rather than market exchange rates, public and publicly-guaranteed debt was 44 percent of GDP at end-2009.

trajectories that are consistent with even lower nominal debt thresholds, such as 40 percent of GDP, as is more customary for small emerging economies and considering Vietnam's potential contingent risks linked to its large SOE sector, low reserve buffer, and emerging domestic debt vulnerabilities (see below).

11. **The authorities need to factor in the additional vulnerability implied by a shortening of domestic debt maturities.** There has been an unmistakable decline in the maturity of public sector marketable securities issued, from 10 years in 2004 to just over 2 years in 2009. While some of this is traceable to the liquidity squeeze in the aftermath of the global financial crisis, the trend appears to indicate a supply appetite (as evidenced by the increase in amounts issued through 2008) that has almost exhausted demand at current interest rates. To ensure a smooth rollover of maturing debt obligations in the coming years and cultivate the ability to borrow long term in local currency, a review of the current low interest rate ceiling and of the microstructure of Treasury auctions would be important.

Issuance of Marketable Local Currency Public Debt, 2004–09



Source: Ministry of Finance, HASTC, and State Bank of Vietnam.

12. **The authorities are strengthening public debt management.** Public debt management and reporting have traditionally been fragmented. As Vietnam gradually moves from concessional financing to more market-based financing, and given the potential maturity, refinancing, and currency risks over the medium term, improving debt management capacity and reporting (especially to markets) are essential. Against this backdrop, the authorities passed the 2009 Public Debt Management Law, and four accompanying decrees are currently under preparation. The integration of external and domestic public debt management reporting under the Ministry of Finance debt department is ongoing.

IV. Conclusion

13. **Vietnam remains at low risk of external debt distress, but debt indicators have deteriorated due to the negative impact of the global crisis and the increased macroeconomic risks in late 2009.** Compared with the last DSA, the projected PPG external debt ratios and projected path are less favorable, but still remain well below indicative thresholds under the baseline scenario. Under the sensitivity analysis, one indicator (PV of

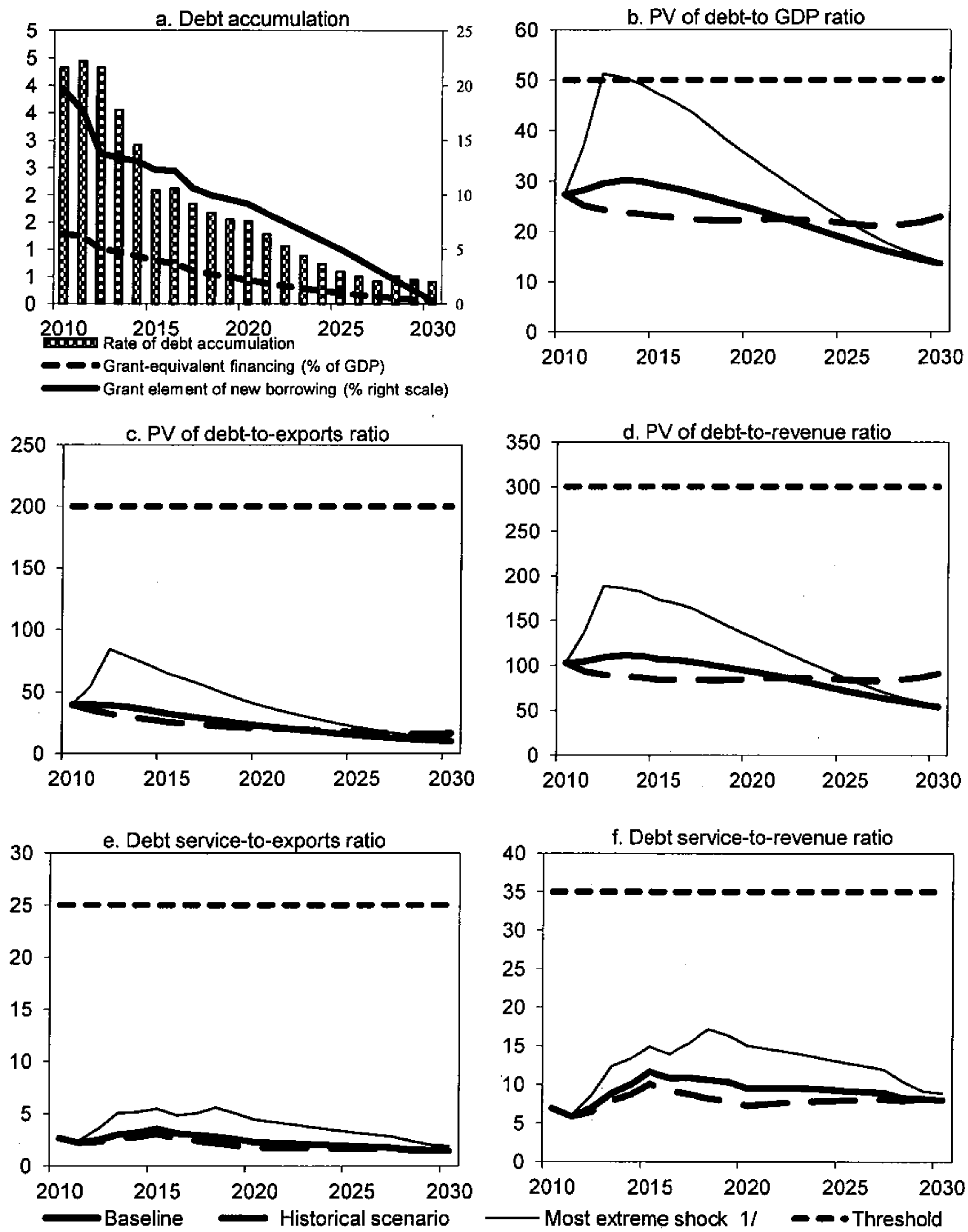
PPG external debt-to-GDP ratio) breaches the threshold very briefly and marginally under two tests, while the others remain below the applicable thresholds.

14. **Public debt indicators have been adversely impacted by the global downturn and the large stimulus package implemented in 2009.** Vietnam's end-2009 fiscal deficit and public sector debt, at 9 and 49 percent of GDP, respectively, are more elevated than the levels projected in the previous DSA. Given Vietnam's prospective, albeit gradual, graduation from concessional external financing over the medium term, and the currency and refinancing risks highlighted above, there appears less cause for complacency than before on the fiscal front.

15. **The above debt sustainability results depend critically on the underlying assumptions.** The key assumptions include: (i) a fiscal adjustment that reduces the overall deficit to about 3 percent of GDP in order to anchor public sector debt to below 50 percent of GDP by 2015 and toward 40 percent of GDP thereafter; (ii) healthy export growth and continued dynamism of the Vietnamese economy more generally; (iii) continued access to non-debt-creating external financing, especially private remittances and FDI; and (iv) continued access to concessional financing by multilateral and bilateral sources in the medium term.

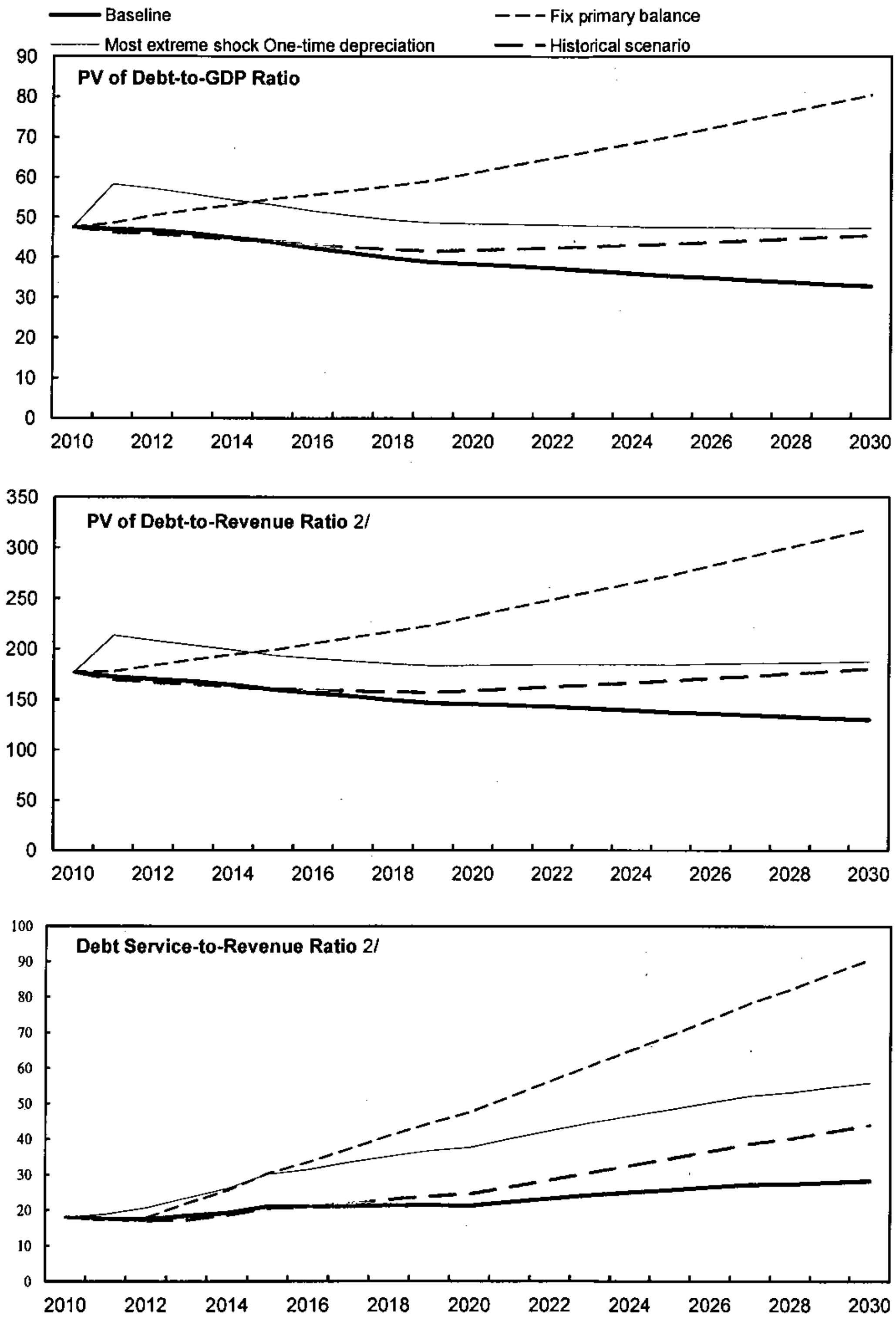
16. **A risk that deserves special attention is the possible impact of potential government contingent liabilities.** Given inadequate information on the true net worth of state-owned enterprises, it is not possible to quantify the fiscal risks posed by the sector. However, the experience of recent state-owned commercial bank recapitalizations and support to Vinashin (a state-owned maritime company) suggests the need for added caution when projecting the net contribution from SOEs to fiscal aggregates (both stocks and flows).

Figure 1. Vietnam: Indicators of Public and Publicly-Guaranteed External Debt under Alternatives Scenarios, 2010–30 1/



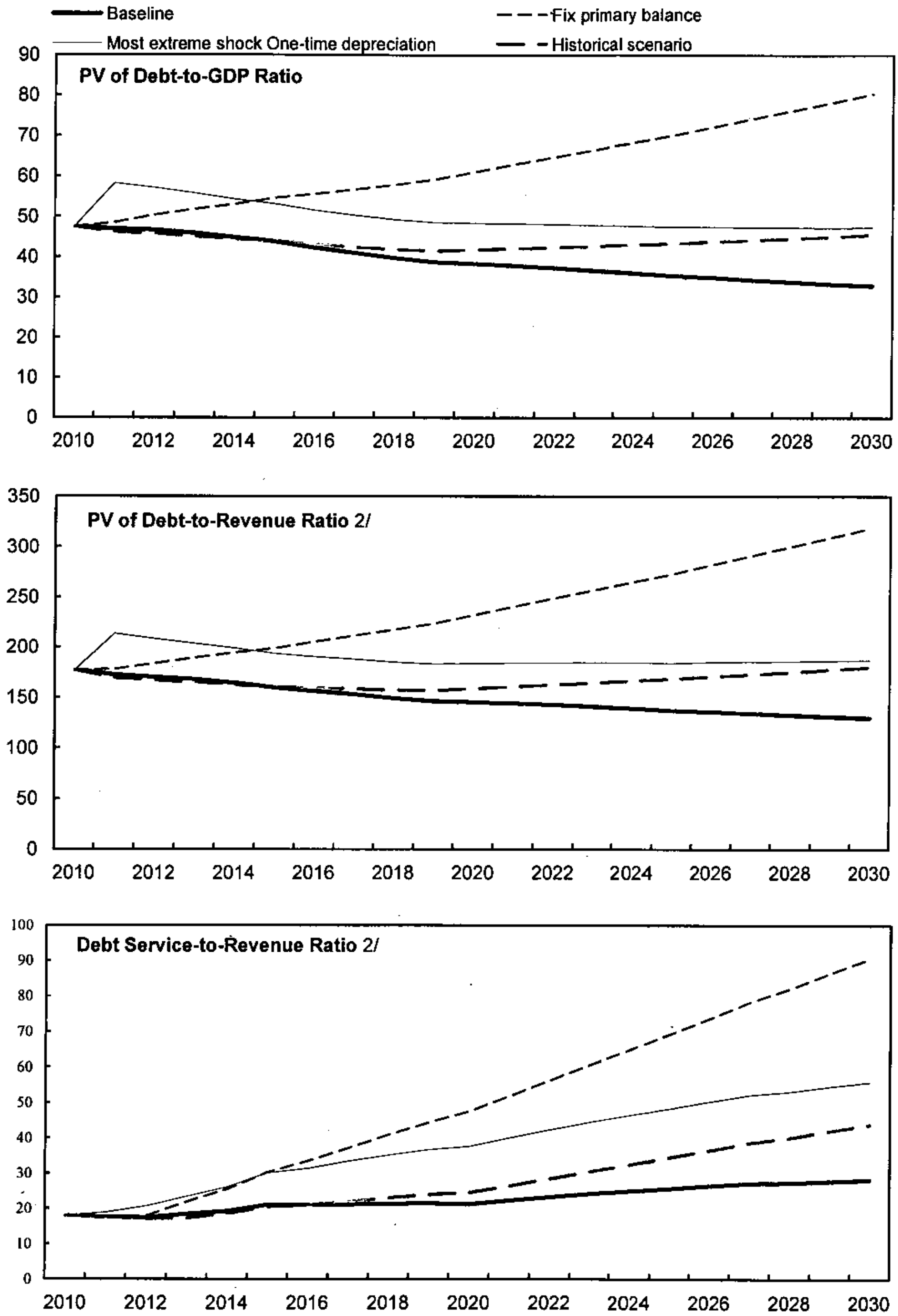
Sources: Vietnamese authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2020. In figure b. it corresponds to a Combination shock; in c. to a Exports shock; in d. to a Combination shock; in e. to a Exports shock and in figure f. to a Combination shock.

Figure 3.Vietnam: Indicators of Public Debt Under Alternative Scenarios, 2010–30 1/



Sources: Vietnamese authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2020.
2/ Revenues are defined inclusive of grants.

Figure 3.Vietnam: Indicators of Public Debt Under Alternative Scenarios, 2010–30 1/



Sources: Vietnamese authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2020.
2/ Revenues are defined inclusive of grants.

Table 1a. Vietnam: Public Sector Debt Sustainability Framework, Baseline Scenario, 2007–30

(In percent of GDP, unless otherwise indicated)

	Actual			Average	Standard Deviation	Estimate	Projections								
	2007	2008	2009			2010	2011	2012	2013	2014	2015	2010–15 Average	2020	2030	2016–30 Average
Public sector debt 1/	45.6	43.9	49.0			51.3	50.9	50.8	50.0	49.0	48.0		41.7	34.6	
Of which: Foreign-currency denominated	28.0	26.8	31.2			31.6	33.1	34.5	35.1	35.1	34.4		29.5	18.3	
Change in public sector debt	2.6	-1.6	5.1			2.3	-0.4	-0.2	-0.7	-1.1	-1.0		-0.6	-0.5	
Identified debt-creating flows	-4.5	-7.6	5.7			-0.6	-2.1	-1.5	-1.6	-1.5	-1.6		-1.1	-0.4	
Primary deficit	0.7	-0.3	7.4	2.2	2.3	4.5	2.9	2.3	2.1	2.0	1.7	2.6	1.5	0.9	1.3
Revenue and grants	28.7	29.0	26.7			26.9	27.2	27.4	27.3	27.3	27.4		26.3	25.2	
Of which: Grants	0.5	0.6	0.4			0.3	0.3	0.3	0.2	0.2	0.2		0.1	0.0	
Primary (noninterest) expenditure	29.3	28.7	34.0			31.3	30.2	29.7	29.4	29.3	29.2		27.8	26.2	
Automatic debt dynamics	-5.2	-7.3	-1.6			-5.0	-5.0	-3.8	-3.7	-3.5	-3.4		-2.6	-1.4	
Contribution from interest rate/growth differential	-3.9	-5.0	-1.9			-3.2	-3.8	-3.4	-3.4	-3.3	-3.1		-2.4	-1.3	
Of which: Contribution from average real interest rate	-0.5	-2.3	0.4			-0.3	-0.5	-0.1	0.0	0.2	0.3		0.6	1.0	
Of which: Contribution from real GDP growth	-3.3	-2.7	-2.2			-3.0	-3.3	-3.4	-3.4	-3.5	-3.4		-3.0	-2.3	
Contribution from real exchange rate depreciation	-1.3	-2.3	0.2			-1.8	-1.2	-0.4	-0.3	-0.2	-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	7.2	5.9	-0.6			2.8	1.8	1.3	0.9	0.5	0.6		0.5	-0.1	
Residual, including asset changes															
Other Sustainability Indicators															
Present value (PV) of public sector debt	...	...	45.1			47.5	47.0	46.7	45.9	44.8	43.8		38.3	32.8	
Of which: Foreign-currency denominated	...	...	27.2			27.8	29.1	30.4	31.0	30.9	30.2		26.0	16.5	
Of which: External	...	...	26.7			27.3	28.2	29.6	30.1	30.0	29.1		24.4	13.6	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	6.1	4.2	12.9			9.9	8.6	8.6	8.6	8.7	8.9		9.0	11.8	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	169.0			177.0	172.4	170.2	167.8	164.2	159.7		145.4	130.1	
PV of public sector debt-to-revenue ratio (in percent)	...	...	171.5			178.7	174.0	171.8	169.3	165.7	161.1		146.2	130.4	
Of which: External 3/	...	...	101.5			102.8	104.5	108.8	111.0	110.9	107.0		93.3	53.9	
Debt service-to-revenue and grants ratio (in percent) 4/	12.6	13.1	16.6			17.9	17.5	17.3	18.4	19.3	21.0		21.2	28.2	
Debt service-to-revenue ratio (in percent) 4/	12.8	13.4	16.9			18.1	17.7	17.5	18.6	19.4	21.2		21.3	28.3	
Primary deficit that stabilizes the debt-to-GDP ratio	-2.0	1.4	2.3			2.2	3.3	2.5	2.8	3.0	2.7		2.2	1.5	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	8.5	6.3	5.3	7.3	1.0	6.5	6.8	7.0	7.2	7.4	7.5	7.1	7.5	7.0	7.3
Average nominal interest rate on forex debt (in percent)	2.3	2.1	2.1	2.3	0.3	2.8	2.2	2.6	2.8	3.0	2.9	2.7	3.1	4.3	3.5
Average real interest rate on domestic debt (in percent)	-2.8	-13.9	0.8	2.6	9.2	-5.2	-4.2	-1.8	-1.6	-1.2	-0.4	-2.4	1.9	3.6	2.5
Real exchange rate depreciation (in percent, + indicates depreciation)	-5.4	-8.6	0.9	-2.0	3.8	-5.9	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	8.2	22.1	6.0	7.6	5.6	10.6	9.0	6.1	5.9	5.6	5.7	7.1	5.7	5.0	5.4
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.0	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	...	...	19.6	17.7	13.8	13.4	13.1	12.3	15.0	9.2	0.3	...

Sources: Vietnamese authorities; and staff estimates and projections.

1/ Gross debt of the general government plus gross debt guaranteed by the 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 2010–30

				Projections				
	2010	2011	2012	2013	2014	2015	2020	2030
PV of debt-to-GDP ratio								
Baseline	48	47	47	46	45	44	38	33
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	48	46	46	45	44	44	42	45
A2. Primary balance is unchanged from 2010	48	49	50	52	53	55	61	80
A3. Permanently lower GDP growth 1/	48	47	47	47	46	45	42	44
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011–12	48	47	48	47	46	46	42	38
B2. Primary balance is at historical average minus one standard deviations in 2011–12	48	49	51	50	48	47	41	35
B3. Combination of B1-B2 using one half standard deviation shocks	48	47	48	48	47	46	40	35
B4. One-time 30 percent real depreciation in 2011	48	58	57	56	54	53	48	47
B5. 10 percent of GDP increase in other debt-creating flows in 2011	48	57	56	55	54	53	46	39
PV of Debt-to-Revenue Ratio 2/								
Baseline	177	172	170	168	164	160	145	130
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	177	169	167	165	162	160	159	180
A2. Primary balance is unchanged from 2010	177	178	184	190	194	199	232	319
A3. Permanently lower GDP growth 1/	177	173	172	170	168	164	159	174
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011–12	177	174	174	173	170	167	158	152
B2. Primary balance is at historical average minus one standard deviations in 2011–12	177	178	184	182	178	173	157	140
B3. Combination of B1-B2 using one half standard deviation shocks	177	174	177	174	171	166	153	139
B4. One-time 30 percent real depreciation in 2011	177	214	208	204	199	193	184	187
B5. 10 percent of GDP increase in other debt-creating flows in 2011	177	209	206	203	198	192	175	154
Debt Service-to-Revenue Ratio 2/								
Baseline	18	18	17	18	19	21	21	28
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	18	17	17	17	18	20	24	44
A2. Primary balance is unchanged from 2010	18	18	18	22	25	30	47	91
A3. Permanently lower GDP growth 1/	18	18	17	19	20	22	24	41
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011–12	18	18	18	19	20	23	25	35
B2. Primary balance is at historical average minus one standard deviations in 2011–12	18	18	18	22	25	26	26	32
B3. Combination of B1-B2 using one half standard deviation shocks	18	18	18	20	22	23	24	31
B4. One-time 30 percent real depreciation in 2011	18	19	21	23	26	30	38	56
B5. 10 percent of GDP increase in other debt-creating flows in 2011	18	18	21	36	30	34	32	37

Sources: Vietnamese authorities; and staff estimates and projections.
1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of the length of the projection period.
2/ Revenues are defined inclusive of grants.

Table 3a. Vietnam: External Debt Sustainability Framework, Baseline Scenario, 2007–30 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average	Standard Deviation	Projections									
	2007	2008	2009			2010	2011	2012	2013	2014	2015	2010–15 Average	2020	2030	2016–30 Average
External debt (nominal) 1/	**32.3**	**33.5**	**40.7**			**40.8**	**41.3**	**42.5**	**42.8**	**42.5**	**41.4**		**36.0**	**22.7**	
Of which: Public and publicly-guaranteed (PPG)	28.0	26.8	30.6			31.1	32.2	33.6	34.2	34.2	33.3		27.9	15.4	
Change in external debt	0.8	1.1	7.2			0.1	0.5	1.2	0.3	-0.3	-1.1		-1.2	-1.0	
Identified net debt-creating flows	-1.9	-3.1	0.3			0.2	-0.5	-1.3	-2.4	-3.0	-3.6		-3.9	-4.9	
Noninterest current account deficit	**9.0**	**11.3**	**7.1**	**2.7**	**5.1**	**8.1**	**7.3**	**6.4**	**5.2**	**4.4**	**3.5**		**2.3**	**-1.2**	1.4
Deficit in balance of goods and services	15.8	15.2	10.1			11.8	10.3	9.6	8.8	8.2	7.5		6.6	3.2	
Exports	76.8	77.2	67.5			69.2	71.5	75.6	80.0	84.7	89.7		109.0	138.9	
Imports	92.6	92.4	77.6			81.0	81.8	85.2	88.8	92.9	97.2		115.7	142.1	
Net current transfers (negative = inflow)	-9.0	-8.1	-7.0	-6.5	1.5	-6.4	-6.3	-6.2	-6.2	-6.2	-6.2		-6.0	-4.2	-5.6
Of which: Official	-0.4	-0.6	-0.5			-0.5	-0.5	-0.5	-0.5	-0.5	-0.5		-0.2	-0.1	
Other current account flows (negative = net inflow)	2.2	4.2	3.9			2.8	3.3	3.0	2.6	2.3	2.2		1.7	-0.1	
Net FDI (negative = inflow)	**-7.3**	**-8.2**	**-6.8**	**-4.0**	**2.4**	**-6.7**	**-6.2**	**-6.0**	**-5.9**	**-5.6**	**-5.3**		**-4.8**	**-3.1**	-4.2
Endogenous debt dynamics 2/	**-3.6**	**-6.2**	**0.0**			**-1.3**	**-1.6**	**-1.6**	**-1.7**	**-1.7**	**-1.7**		**-1.4**	**-0.6**	
Contribution from nominal interest rate	0.9	0.7	1.1			1.1	0.9	1.0	1.1	1.1	1.2		1.1	0.9	
Contribution from real GDP growth	-2.3	-1.6	-1.7			-2.4	-2.5	-2.6	-2.8	-2.9	-2.9		-2.5	-1.5	
Contribution from price and exchange rate changes	-2.2	-5.3	0.7			...	...	...	...	...	...		...	...	
Residual (3–4) 3/	**2.7**	**4.2**	**6.9**			**-0.1**	**1.0**	**2.5**	**2.7**	**2.7**	**2.5**		**2.7**	**3.9**	
Of which: Exceptional financing	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	36.7			37.0	37.3	38.4	38.7	38.3	37.3		32.5	20.9	
In percent of exports	...	...	54.4			53.4	52.2	50.8	48.3	45.3	41.6		29.8	15.1	
PV of PPG external debt	...	...	**26.7**			**27.3**	**28.2**	**29.6**	**30.1**	**30.0**	**29.1**		**24.4**	**13.6**	
In percent of exports	...	...	**39.5**			**39.5**	**39.4**	**39.1**	**37.6**	**35.4**	**32.4**		**22.4**	**9.8**	
In percent of government revenues	...	...	**101.5**			**102.8**	**104.5**	**108.8**	**111.0**	**110.9**	**107.0**		**93.3**	**53.9**	
Debt service-to-exports ratio (in percent)	**3.1**	**2.9**	**4.2**			**4.1**	**3.9**	**4.1**	**4.4**	**4.5**	**4.7**		**3.1**	**1.9**	
PPG debt service-to-exports ratio (in percent)	**1.6**	**1.6**	**2.0**			**2.7**	**2.2**	**2.5**	**3.0**	**3.2**	**3.5**		**2.3**	**1.5**	
PPG debt service-to-revenue ratio (in percent)	**4.4**	**4.3**	**5.2**			**6.9**	**5.9**	**7.0**	**8.8**	**10.0**	**11.7**		**9.5**	**8.0**	
Total gross financing need (billions of U.S. dollars)	3.1	5.0	5.1			9.7	10.0	10.2	10.3	10.8	11.4		13.8	17.9	
Noninterest current account deficit that stabilizes debt ratio	8.2	10.1	-0.1			8.0	6.8	5.2	4.9	4.7	4.6		3.5	-0.2	
Key macroeconomic assumptions															
Real GDP growth (in percent)	8.5	6.3	5.3	7.3	1.0	6.5	6.8	7.0	7.2	7.4	7.5	7.1	7.5	7.0	7.3
GDP deflator in U.S. dollar terms (change in percent)	7.6	19.4	-2.0	5.0	6.3	4.8	5.6	3.0	2.8	2.6	2.6	3.5	2.7	2.0	2.4
Effective interest rate (percent) 5/	3.2	2.7	3.3	2.8	0.3	3.0	2.5	2.6	2.8	3.0	3.1	2.8	3.3	4.1	3.5
Growth of exports of G&S (U.S. dollar terms, in percent)	21.5	27.7	-9.8	16.8	12.1	14.4	16.6	16.5	16.6	16.6	16.8	16.3	14.8	11.8	13.1
Growth of imports of G&S (U.S. dollar terms, in percent)	38.0	26.7	-13.3	19.1	14.5	16.4	14.0	14.8	14.9	15.2	15.4	15.1	14.2	11.3	12.7
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	19.6	17.7	13.8	13.4	13.1	12.3	15.0	9.2	0.3	6.4
Government revenues (excluding grants, in percent of GDP)	28.1	28.3	26.3			26.6	27.0	27.2	27.1	27.0	27.2		26.2	25.2	25.9
Aid flows (in billions of U.S. dollars) 7/	1.9	2.5	4.0			1.7	1.8	1.5	1.7	1.6	1.5		1.5	1.4	
Of which: Grants	0.4	0.6	0.4			0.3	0.3	0.3	0.4	0.4	0.4		0.4	0.3	
Of which: Concessional loans	1.5	2.0	3.6			1.4	1.5	1.2	1.3	1.2	1.1		1.1	1.1	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			1.3	1.2	1.0	1.0	0.9	0.8		0.4	0.1	0.3
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			23.3	21.3	17.5	17.3	17.1	16.6		12.9	2.8	9.8
Memorandum items:															
Nominal GDP (in billions of U.S. dollars)	71.1	90.3	93.2			103.9	117.2	129.2	142.4	156.9	173.0		281.3	709.2	
Nominal dollar GDP growth	16.7	26.9	3.2			11.6	12.8	10.2	10.2	10.2	10.3	10.9	10.3	9.1	9.9
PV of PPG external debt (in billions of U.S. dollars)			23.9			28.0	32.6	37.6	42.2	46.4	49.6		67.7	94.9	
(PVt-PVt-1)/GDPt-1 (in percent)						4.3	4.4	4.3	3.5	2.9	2.1	3.6	1.5	0.4	1.0
Gross remittances (in billions of U.S. dollars)	6.2	6.8	6.0			6.1	6.7	7.4	8.1	8.8	9.9		16.3	29.3	
PV of PPG external debt (in percent of GDP + remittances)	...	...	25.0			25.8	26.7	28.0	28.5	28.4	27.5		23.1	13.0	
PV of PPG external debt (in percent of exports + remittances)	...	...	36.1			36.4	36.5	36.4	35.1	33.2	30.5		21.3	9.5	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	1.8			2.4	2.0	2.3	2.8	3.0	3.3		2.2	1.4	

Sources: Vietnamese authorities; and staff estimates and projections.

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 errors and omissions and changes in gross international reserves (GIR) for historical data and 2010. For 2011-30, residuals mainly reflect changes in GIR (i.e., a positive residual implies an accumulation of GIR). As the reserve coverage is projected to improve from about 2 months in 2010 to about 3.5 months in 2030, and imports increase as a share of GDP, the accumulation of GIR (and hence residuals) in percent of GDP is projected to rise gradually in outer years.

4/ Assumes that PV 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 generally derived over the past 10 years, subject to data availability.

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 PV of new debt).

Table 3b. Vietnam: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010–30

(In percent)

	Projections							
	2010	2011	2012	2013	2014	2015	**2020**	2030
PV of debt-to GDP ratio								
Baseline	27	28	30	30	30	29	**24**	14
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	27	25	24	24	23	23	**22**	23
A2. New public sector loans on less favorable terms in 2010-2030 2	27	30	32	34	35	35	**34**	25
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	27	28	29	30	29	28	**23**	12
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	27	35	51	51	49	47	**34**	13
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	27	30	32	33	32	31	**26**	13
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	27	34	41	40	40	38	**29**	13
B5. Combination of B1-B4 using one-half standard deviation shocks	27	37	51	51	49	47	**34**	14
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	27	39	40	41	41	39	**32**	16
PV of debt-to-exports ratio								
Baseline	40	39	39	38	35	32	**22**	10
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	40	35	32	30	28	26	**20**	16
A2. New public sector loans on less favorable terms in 2010-2030 2	40	41	43	43	42	39	**31**	18
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	40	39	38	37	34	31	**21**	8
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	40	55	84	78	72	65	**39**	12
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-2012	40	39	38	37	34	31	**21**	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	40	47	54	51	47	42	**26**	9
B5. Combination of B1-B4 using one-half standard deviation shocks	40	53	71	67	61	55	**33**	11
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	40	39	38	37	34	31	**21**	8
PV of debt-to-revenue ratio								
Baseline	103	104	109	111	111	107	**93**	54
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	103	93	90	88	87	85	**85**	91
A2. New public sector loans on less favorable terms in 2010-2030 2	103	109	119	126	130	130	**128**	100
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	103	103	108	109	109	104	**89**	47
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	103	131	189	187	182	173	**130**	53
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-2012	103	110	118	120	120	115	**98**	52
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	103	125	150	149	147	140	**110**	50
B5. Combination of B1-B4 using one-half standard deviation shocks	103	138	189	186	182	173	**131**	55
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	103	143	148	151	150	144	**122**	65

Table 3b. Vietnam: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010–30 (concluded)
(In percent)

		Projections						
	2010	2011	2012	2013	2014	2015	2020	2030
Debt service-to-exports ratio								
Baseline	3	2	3	3	3	4	2	1
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	3	2	2	3	3	3	2	2
A2. New public sector loans on less favorable terms in 2010-2030 2	3	2	2	2	2	3	2	2
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	3	2	2	3	3	4	2	1
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	3	2	4	5	5	5	4	2
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-2012	3	2	2	3	3	4	2	1
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	3	2	3	4	4	4	3	1
B5. Combination of B1-B4 using one-half standard deviation shocks	3	2	3	4	4	5	4	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	3	2	2	3	3	4	2	1
Debt service-to-revenue ratio								
Baseline	7	6	7	9	10	12	10	8
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	7	6	6	8	9	10	7	8
A2. New public sector loans on less favorable terms in 2010-2030 2	7	6	6	7	8	9	10	13
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	7	6	7	9	10	12	9	8
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	7	6	8	12	13	15	15	9
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-2012	7	6	8	10	11	13	10	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	7	6	8	11	12	13	12	8
B5. Combination of B1-B4 using one-half standard deviation shocks	7	6	9	12	13	15	15	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	7	8	10	12	14	16	13	10
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	-5	-5	-5	-5	-5	-5	-5	-5

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

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.

Table 3b. Vietnam: Sensitivity Analysis for Key Indicators of Public and Publicly-Guaranteed External Debt with Remittances, 2010–30

(In percent)

		Projections						
	2010	2011	2012	2013	2014	2015	2020	2030
PV of debt-to-GDP+remittances ratio								
Baseline	26	27	28	28	28	28	**23**	13
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	26	24	23	23	22	22	**21**	22
A2. New public sector loans on less favorable terms in 2010-2030 2	26	28	31	32	33	33	**32**	24
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	26	26	28	28	28	27	**22**	11
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	26	33	49	48	47	45	**32**	13
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-2012	26	28	30	31	30	29	**24**	13
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	26	32	39	38	38	36	**27**	12
B5. Combination of B1-B4 using one-half standard deviation shocks	26	35	49	48	46	44	**32**	13
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	26	36	37	38	38	36	**30**	16
PV of debt-to-exports+remittances ratio								
Baseline	36	36	36	35	33	31	**21**	9
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	36	33	30	28	26	24	**20**	16
A2. New public sector loans on less favorable terms in 2010-2030 2	36	38	40	40	39	37	**29**	18
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	36	36	35	34	32	29	**20**	8
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	36	50	77	72	66	60	**36**	12
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-2012	36	36	35	34	32	29	**20**	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	36	44	51	47	44	40	**25**	9
B5. Combination of B1-B4 using one-half standard deviation shocks	36	49	66	61	57	52	**31**	10
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	36	36	35	34	32	29	**20**	8
PV of debt-to-revenue ratio								
Baseline	103	104	109	111	111	107	**93**	54
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	103	93	90	88	87	85	**85**	91
A2. New public sector loans on less favorable terms in 2010-2030 2	103	109	119	126	130	130	**128**	100
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	103	103	108	109	109	104	**89**	47
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	103	131	189	187	182	173	**130**	53
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-2012	103	110	118	120	120	115	**98**	52
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	103	125	150	149	147	140	**110**	50
B5. Combination of B1-B4 using one-half standard deviation shocks	103	138	189	186	182	173	**131**	55
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	103	143	148	151	150	144	**122**	65

Table 3b. Vietnam: Sensitivity Analysis for Key Indicators of Public and Publicly-Guaranteed External Debt with Remittances, 2010–30 (concluded)

(In percent)

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
Debt service-to-exports+remittances ratio								
Baseline	2	2	2	3	3	3	2	1
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	2	2	2	2	3	3	2	1
A2. New public sector loans on less favorable terms in 2010-2030 2	2	2	2	2	2	3	2	2
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	2	2	2	3	3	3	2	1
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	2	2	3	5	5	5	4	2
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-2012	2	2	2	3	3	3	2	1
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	2	2	3	3	3	4	3	1
B5. Combination of B1-B4 using one-half standard deviation shocks	2	2	3	4	4	4	4	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	2	2	2	3	3	3	2	1
Debt service-to-revenue ratio								
Baseline	7	6	7	9	10	12	10	8
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	7	6	6	8	9	10	7	8
A2. New public sector loans on less favorable terms in 2010-2030 2	7	6	6	7	8	9	10	13
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	7	6	7	9	10	12	9	8
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	7	6	8	12	13	15	15	9
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2011-2012	7	6	8	10	11	13	10	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	7	6	8	11	12	13	12	8
B5. Combination of B1-B4 using one-half standard deviation shocks	7	6	9	12	13	15	15	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	7	8	10	12	14	16	13	10
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	-5	-5	-5	-5	-5	-5	-5	-5

Sources: Vietnamese authorities; and staff estimates and projections.

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.