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LAO PEOPLE'S DEMOCRATIC REPUBLIC

STAFF REPORT FOR THE 2016 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITY ANALYSIS[1]

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The risk of Lao P.D.R. facing external debt distress has risen from moderate to high.[2] External debt distress indicators are more elevated than in the 2014 DSA, owing to the higher initial external PPG debt stock and projected debt flows to support public investment. Some external debt indicators breach the respective policy-dependent indicative thresholds for some years, indicating limited buffers in the case of adverse shocks. Also, the present value (PV) of public sector debt-to-GDP ratio breaches the benchmark for some years. Given the considerable share of foreign-currency-denominated debt, a large and sudden exchange rate depreciation could significantly raise the level of those indicators, putting debt dynamics on an unsustainable path. Though revenues from large resource projects are expected to mitigate risks over the long term, external borrowing should remain on concessional terms as much as possible to reduce the debt burden. The deterioration of the debt distress risk rating suggests the urgent need to recalibrate fiscal policy to rebuild fiscal buffers, adopt clear guidelines for the issuance of sovereign debt and guarantees to help contain and monitor contingent liabilities, and strengthen the debt management capacity, including developing a comprehensive medium-term debt management strategy and regularly performing a debt sustainability analysis to inform borrowing decisions.

[1] This DSA has been prepared by IMF and World Bank staff, in consultation with the Lao P.D.R. authorities.

[2] The low-income country debt sustainability framework (LIC DSF) recognizes that better policies and institutions allow countries to manage higher levels of debt, and thus the threshold levels for debt indicators are policy-dependent. In the LIC-DSF, the quality of a country's policies and institutions is measured by the World Bank's Country Policy and Institutional Assessment (CPIA) index and classified into three categories: strong, medium, and weak. Lao P.D.R.'s policies and institutions, as measured by the CPIA, averaged 3.34 over the past three years. Since its average CPIA index has been above 3.25 for three years in a row, Lao P.D.R.'s policy performance remains classified as medium according to the "Staff Guidance Note on the Application of the Joint Fund-Bank Debt Sustainability Framework for Low-income Countries" (www.imf.org/external/np/pp/eng/2010/012210.pdf). Therefore, the relevant indicative thresholds for this category are: 40 percent for the PV of debt-to-GDP ratio, 150 percent for the PV of debt-to-exports ratio, 250 percent for the PV of debt-to-revenue ratio, 20 percent for the debt service-to-exports ratio, and 20 percent for the debt service-to-revenue ratio. These thresholds are applicable to public and publicly guaranteed external debt.

BACKGROUND

1. The 2014 Debt Sustainability Analysis (DSA) classified Lao P.D.R.'s risk of debt distress as moderate, but it was on the borderline of high risk, with heightened vulnerabilities for public debt.

Lao P.D.R.: External Public Debt Indicators		
	Indicative thresholds	End-2015
Present value of debt, as a percent of:		
GDP	40	40.1
Exports	150	95.5
Revenue	250	218.1
Debt service, as a percent of:		
Exports	20	5.2
Revenue	20	11.9

Sources: Lao P.D.R. authorities; and IMF and World Bank estimates.

2. This DSA reclassifies the risk of debt distress from moderate to high, due to increased external borrowing. The indicative debt distress thresholds remain unchanged from the 2014 DSA, since the classification of Lao P.D.R.'s policy performance, according to the Country Policy and Institutional Assessment (CPIA) index, remains moderate.[3] Under the baseline scenario of the current DSA, some of the external and public debt distress indicators breach the policy-dependent indicative thresholds for some years, although the net present value (PV) of external debt follows a downward trend and returns to levels below the respective thresholds in the medium term. Under the alternative scenarios, some indicators also breach the thresholds for some periods. The breach of at least one indicator both under the baseline and alternative scenarios classifies the risk of debt distress as high.

3. Lao P.D.R.'s external public and publicly guaranteed (PPG) debt has risen for the past few years. The nominal stock of PPG external debt increased from US$5.4 billion at end-2013 to about US$6.5 billion at end-2015, due mainly to higher borrowing from Thailand and China and sovereign bond issuance in the Thai market. The rise in debt was in part driven by heavy investment in power generation projects, part of the strategy to use the country's abundant hydropower resources to export energy to the rapidly growing neighborhood.[4] Thus, the PPG external debt rose from 50.9 percent of GDP at end-2013 to 51.7 percent of GDP at end-2015. The corresponding net present value (PV) of PPG external debt increased from 39.8 percent of GDP at end-2013 to 40.1 percent at-end 2015, which is above the 40 percent indicative threshold.

Lao P.D.R.: Stock of External PPG Debt at End-2015			
	In Billions of U.S. Dollars	As a Share of Total External Debt	In Percent of GDP
Total	6.5	100	51.7
Multilateral	1.5	22.8	11.8
Bilateral	4.2	64.4	33.3
Commercial 1/	0.8	12.8	6.6

Sources: Lao P.D.R. authorities; and IMF and World Bank staff estimates.
1/ Commercial debt includes Thai bond issuance.

[3] Lao P.D.R.'s CPIA index declined from 3.36 in 2014 to 3.29 in 2015 and averaged 3.34 over the past three years, not sufficient to change the classification of its policy performance, which remains moderate.

[4] The installed capacity in Lao P.D.R.'s power system increased from around 600MW in early 2000 to above 6,000MW most recently with most of the generated electricity is exported to Thailand. The installed capacity is expected to reach above 10,000MW by 2020.

4. **Bilateral creditors have been a greater source of loans than multilateral creditors in 2015, and this trend is expected to continue in the projection period.** Bilateral creditors—mainly China, Russia, Thailand, Japan, and Korea—account for 64.4 percent of total external PPG debt at end-2015. Multilateral creditors consist mainly of the Asian Development Bank (AsDB—12.2 percent of total external PPG debt), and the International Development Association (IDA—7.8 percent of total external PPG debt). Sovereign bonds have also been issued in the Thai capital market starting in May 2013 and the outstanding sovereign bonded debt at end-2015 was US$838 million, 12.8 percent of total external PPG debt (Box 1).

Box 1. Lao P.D.R.: Sovereign Bond Issuance in the Thai Market

Lao P.D.R first issued baht-denominated bonds in Thailand in May 2013, followed by three more issuances in December 2013, October 2014, and June 2015. In December 2015, Lao P.D.R. also issued its first US dollar-denominated floating-rate bonds, amounting to US$182 million. The bond proceeds have financed the budget deficit as well as the government's share in power projects. The table below summarizes the sovereign bond issuances since 2013.

The outstanding bonded debt at end-2015 was US$838 million, accounting for 12.8 percent of total external PPG debt. The authorities have indicated that they intend to continue to issue bonds in the Thai market after 2016.

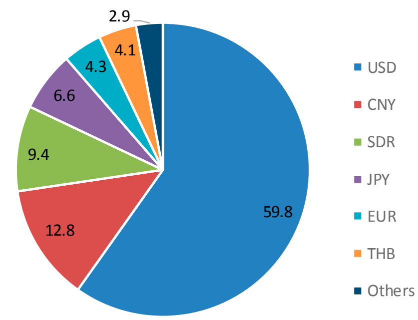
The issuance of bonds with different maturities, ranging from 3 to 12 years, indicates the authorities' goal to establish a yield curve. A credit rating agency based in Thailand (TRIS Rating Co., Ltd) provided an investment grade rating of BBB+ for the Lao government bonds in the Thai market. This rating is based on strong growth, Lao's abundance of natural resources, rising government revenue from hydropower, and the government's commitment to modernize the economy and alleviate poverty.

	2013			2014			2015				
Issue date	30-May	4-Dec	4-Dec	10-Oct	10-Oct	10-Oct	25-Jun	25-Jun	25-Jun	8-Dec	8-Dec
Maturity (years)	3	3	5	3	5	7	3	5	10	10	12
Volume (million Thai Bath)	1,500	434	2,566	1,794	1,830	1,466	1,000	5,000	6,000	5,813	718
Volume (US$ million equivalent)	50	13	80	55	56	45	30	148	178	162	20
Currency	THB	THB	THB	THB	THB	THB	THB	THB	THB	USD	USD
Yield to maturity (%)	4.5	4.7	5.2	4.76	5.2	5.5	3.56	4.32	5	6 month libor+3.38	6 month libor+3.48

Sources: Lao P.D.R. authorities; and IMF and World Bank staff estimates.

5. **About 60 percent of total external PPG outstanding debt was contracted in U.S. dollars.** The rest consists of yen, euro, Thai baht and others. Currency composition has moved significantly towards U.S. dollars at end-2015 compared with end-2014, from about 51.1 percent of total outstanding debt to 59.8 percent.

Currency Composition of External PPG Debt
(Percent of total)



Sources: Lao P.D.R. authorities; and IMF and World Bank staff estimates.

6. **The high level of concessionality of official borrowing helps to reduce the external debt service burden.** PPG external debt service-to-exports ratio is expected to remain below the policy-dependent indicative threshold throughout the projection period in

the baseline scenario. However, PPG external debt service-to-revenue ratio is expected to exceed the threshold for some periods. Furthermore, given high share of U.S. dollars in the currency composition of outstanding external debt and declining concessionality of new borrowing under the current DSA assumptions, these debt service ratios are sensitive to large sudden currency depreciation shocks.

7. **The rising external debt-to-GDP and debt service-to-revenue ratios, as well as near-term threshold breaches, underscore the need to strengthen debt management capacity, including drawing up a comprehensive medium-term debt management strategy.** When contracting new debt, debt sustainability considerations should be taken into account, particularly because the country is expected to shift from concessional to more market-based terms as it graduates from Least Developed Country (LDC) status. Additional near-term external borrowing, for example to finance large projects, could push the debt-to-GDP ratio further over the indicative thresholds for a protracted period, potentially undermining debt sustainability. A mitigating factor for Lao P.D.R.'s external debt burden lies in the prospective returns on the hydropower and mining projects that have been financed in part by the external PPG debt. The long-term power purchase agreements for these projects and the resulting government revenues in the form of royalties, dividends, and profit tax payments help reduce the risk of debt distress in the long run.

8. **Recorded domestic PPG debt rose from 11.6 percent of GDP in 2013 to about 14.1 percent of GDP at end-2015.** Domestic debt consists of bond/T-bill holdings and the legacy of Bank of the Lao P.D.R.'s direct lending to local government's off-budget infrastructure projects in the past. Given higher costs of domestic borrowing, the share of domestic PPG debt remains relatively small. Going forward, as domestic financial markets deepen, the share of domestic public debt is likely to increase. Total domestic and external PPG debt stood at 65.8 percent of GDP at end-2015, up from 62.5 percent at end-2013.

ASSUMPTIONS UNDERLYING THE DEBT SUSTAINABILITY ANALYSIS

Lao P.D.R. Macroeconomic Assumptions
Comparison with 2014 DSA
(Average over the 20 years projection period)

	2014 DSA	2016 DSA
GDP growth	6.6	6.3
GDP deflator in U.S. dollar terms (percent)	1.5	2.1
Non-interest current account deficit	10.6	11.3
Primary deficit	1.9	2.8

Sources: Lao P.D.R. authorities; and IMF and World Bank staff estimates.

9. **The medium-term macroeconomic assumptions underlying the DSA are summarized in Box 2.** The baseline scenario—which is based on current policies and consistent with the macroeconomic framework presented in the staff report—projects annual GDP growth to moderate to 6.9 and 6.8 percent in 2016 and 2017, respectively. Average real GDP growth over the projected period (2016–36) is expected to be 6.3 percent, lower than in the 2014 DSA, reflecting lower economic growth momentum due to a less favorable external environment, including a slight slowdown in major trading partners and lower prices of key exports such as commodities and food. GDP deflator growth (in USD terms) is projected to be about 2.1 percent, higher than in the 2014 DSA, in line with a pickup in

global inflation. The non-interest current account deficit is projected to widen to 11.3 percent of GDP. On the fiscal side, the primary deficit is expected to deteriorate from an historical average of 1.9 percent of GDP to an average of 2.8 percent over the projection period due to weaker tax revenue growth.

10. As a result, a higher level of financing is assumed than in the 2014 DSA. To meet the country's financing needs, a higher level of new borrowing is projected to finance investment that would support the country's ambition to graduate from LDC status by 2020. External financing is assumed to remain largely on concessional terms in the near future except for sovereign bond issuance on the Thai market. Going forward, however, the new disbursement schedule is assumed to rely less on multilateral creditors, and more on bilateral and commercial creditors. Multilateral assistance will slowly shift from grant- to credit-based conditions, and the AsDB and the World Bank Group are expected to remain the principal suppliers of multilateral credit, with IDA loans slowly phasing out and being replaced by IBRD loans with less concessional terms. The level of grant financing is projected to decline over the projection period, adding to the higher projected borrowing needs. As the domestic financial market deepens, the private sector is assumed to rely more on domestic sources of financing, lowering the need for foreign borrowing in the long term.

DEBT SUSTAINABILITY

A. External Debt Sustainability Analysis

11. Under the baseline scenario, the PV of external debt-to-GDP ratio is projected to be above the policy dependent indicative threshold and decline in the medium term (Figure 1). This indicates that the debt distress risk is more elevated than in the 2014 DSA. The change is driven primarily by the higher debt stock at the end of 2015, and higher projected new borrowing, with less concessional terms going forward, as Lao P.D.R. graduates from the LDC status. As a result, the current DSA forecasts a breach of the policy dependent indicative threshold for some periods with respect to three indicators: 1) the PV of external PPG debt-to-GDP ratio, 2) the PV of debt-to-revenue ratio, and 3) the debt service-to-revenue ratio. Other debt and debt service indicators, namely the PV of debt-to-exports ratio and the debt service-to-exports ratio, remain below the policy-dependent indicative threshold during the entire forecast period under the baseline scenario.

12. Under the historical scenario, in which key variables are set at their historical averages, debt dynamics become unsustainable for all debt indicators. The historical scenario is based on 10-year averages of higher current account deficit, real GDP growth, and growth of exports of goods and services than assumed under the baseline scenario, requiring higher debt accumulation rates and putting debt dynamics on an unsustainable path. As shown in Figure 1, all debt indicators except the debt service-to-exports ratio are projected to breach the respective policy dependent indicative thresholds.

Box 2. Lao P.D.R.: Baseline Scenario—Underlying Assumptions (2016–36)

Real GDP growth is projected to average 6.8 percent during 2016–21. Growth has slowed in 2016, partly due to a less favorable external environment, including a slowdown in major trading partners and lower metals prices. Real GDP is expected to moderate to 6.3 percent on average during 2016–36, as production in the resource sector reaches maturity. Graduation from Least Developed Country (LDC) status is projected around early-2020s.

Inflation (measured by GDP deflator in USD terms) is projected to average about 2.1 percent in 2016–36, in line with a possible pickup in global inflation.

The balance of payments continues to be driven by developments in the resource sector, which has an important bearing both on the current account and the capital and financial account. The non-interest current account deficit is estimated to have narrowed to about 14.3 percent of GDP in 2016 and is expected to widen over the medium term, as the railway project is implemented, before it declines to 11.3 percent of GDP on average in the longer term, as the resource balance improves due to the beginning of operation of large-scale power projects. FDI inflows are assumed to be vigorous, driven by growing investment inflows into both resource and non-resource sectors.

External financing is assumed to remain largely on concessional terms in the near term. In the longer-run, however, the degree of concessional financing decreases with economic development, while the new disbursement schedule will shift from multilateral to commercial and bilateral creditors.

- **Multilateral Creditors**: Projected loan disbursements in the medium term are relatively higher than the authorities' projection. New disbursements from IDA is expected to be US$70 million. Lao P.D.R. is expected to gradually establish IBRD creditworthiness which will result in gradual transition from IDA and increasing borrowing at IBRD terms over the projection period. Over the longer term, the share of multilateral loans in total disbursements is expected to decline.
- **Bilateral and Commercial Creditors**: Over the medium and longer term, project loan disbursements increase, as donors provide support to the government's development agenda. This DSA assumes a US$480 million loan from China to build the Lao-China railway (Box 3). As Lao P.D.R. exits from low income country status, a larger share of external borrowing is expected to come from bilateral and commercial creditors, with lower degree of concessionality. This DSA incorporates historical and projected sovereign bond issuance in the Thai market and assumes their continuous roll-over and new bond issuances in the medium term.

Fiscal policy is projected to be neutral in the medium-term. The primary deficit is projected to peak at 4.4 percent of GDP in 2016 and decline gradually to about 3.5 percent of GDP on average over the medium term. Over the long-term the primary deficit is expected to average around 2.8 percent as improvements in non-mining revenue collection come on line, while capital expenditure is expected to decline and other expenditure categories are expected to remain constant as a percent of GDP.

Domestic debt is expected to increase over the long-term as the country relies more on domestic funding. Going forward, as global interest rates are projected to rise and domestic financial markets deepen, a larger share of financing needs is likely to be satisfied by domestic creditors.

Box 3. The Lao P.D.R. Section of the Kunming – Singapore Railway Line

The project involves the construction of a 420 kilometer single track electrified rail line from Vientiane to the border with China on the North. Around 60 percent of the railway line will go through tunnels or on bridges. The railway line is a section of the proposed Kunming – Singapore Trans Asian Railway corridor. The start of works on the section of the proposed corridor going through China was announced earlier in 2016. Other countries on the corridor have announced plans for upgrades to existing lines and construction of new lines; however, actual works have not been initiated.

The Lao P.D.R. section project has been estimated at US$6.7 billion, out of which 30 percent will be provided by a joint venture company already formed between Lao P.D.R. and China. Lao P.D.R. will need to contribute with 30 percent in the capital of this company (or around US$700 million) in annual installments over the medium term. Out of this, US$480 million will be borrowed from China while the remaining funds will be provided by the Budget. The joint venture company will need to secure the remaining 70 percent of the project costs. Lao P.D.R. Ministry of Finance has noted that no sovereign guarantee will be provided. According to the 2012 Feasibility Study, the IRR is 4.56 percent and the repayment period of investment is 23 years.

The formal start of works was announced in December 2015. However, progress has been slow due to still unresolved property issues as well as detailed design works. More recently, six lots for construction works (covering the full length of the proposed railway) were tendered with the awards being given to two Chinese companies with considerable experience in the field. The Lao P.D.R. Ministry of Finance envisages start of construction activities at some point during 2017.

13. **Debt dynamics are markedly worse under the stress test scenarios, with the exchange rate depreciation risk having the largest impact.** An abrupt exchange rate depreciation remains the most important risk to sustainability, given a large share of foreign currency debt and a very thin international reserves cushion. As shown in Figure 1, a one-off 30 percent depreciation shock would cause the breach of the indicative threshold of the PV of debt-to-GDP ratio, the PV of debt-to-revenue ratio, and debt service-to-revenue ratio over a prolonged period. While the PV of external PPG debt declines over the projection period, liquidity indicators worsen, as indicated by the increasing debt service ratios. In addition, an assumed negative shock to FDI inflows—a scenario with net official transfers and net FDI falling in 2016–17 below their historical averages—deteriorates the debt trajectory, forcing Lao P.D.R. to reduce its current account deficit in order to avoid worsening the external debt position.

B. Public Sector Debt Sustainability Analysis

14. **The PV of public sector debt in percent of GDP is projected to breach the benchmark for many years and decline over the long run under the baseline scenario.** Current public sector debt dynamics show a worsening situation than in the 2014 DSA. The PV of public sector debt was estimated at 54.1 percent of GDP in 2015 and is expected to exceed 56.0 percent of the public debt benchmark for many years in the baseline scenario. The breach is primarily driven by a faster amortization schedule on existing 2015 debt and a higher projected disbursement schedule necessary to support growth. The public sector debt is estimated at 65.8 percent of GDP at end-2015 and expected to rise to 70.3 percent of GDP by 2018 before declining over the long run.

15. The deterioration in the baseline and stress test scenarios compared to the 2014 DSA highlights the growing risk of debt distress and the importance of fiscal consolidation over the medium term. As shown in Figure 2 for the fixed primary balance scenario, which assumes an unchanged primary balance from 2016 for the entire projection period, the PV of the debt-to-GDP and debt-to-revenue ratios would be higher than the baseline over the projection period.

16. The PV of public sector debt remains sensitive to a large, abrupt exchange rate depreciation and the realization of contingent liabilities. Owning to significant reliance on external borrowing, a sudden 30-percent depreciation of the kip against the U.S. dollar would immediately raise the PV of public sector debt-to-GDP in the medium-term, indicating unfavorable implications for debt sustainability. Also, given the fragile public banks, recapitalization costs, which are estimated to be at least about US$250 million (1.8 percent of GDP), could add to the debt burden.

AUTHORITIES' VIEWS

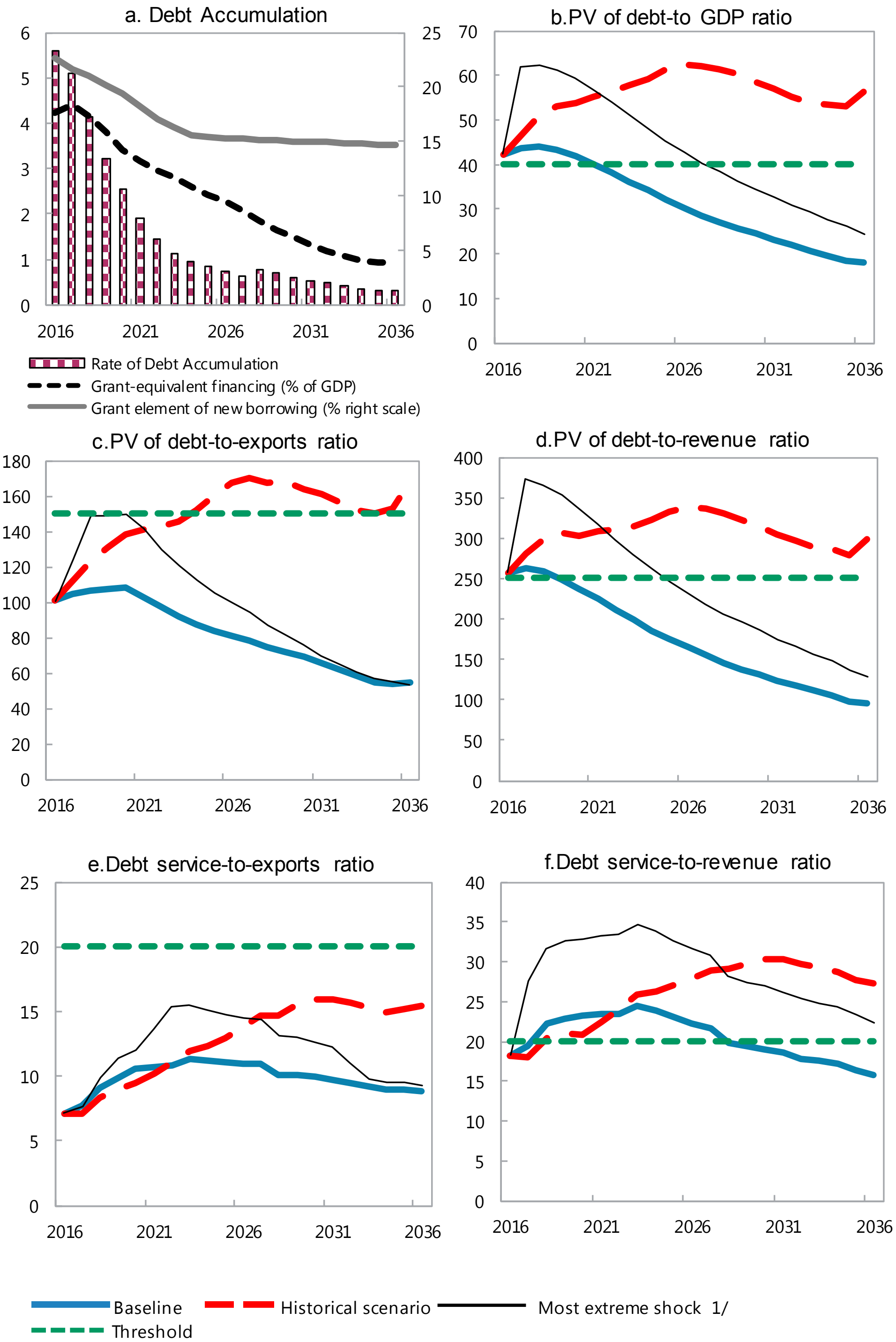
17. The authorities broadly agree with the overall assessment, recognizing that the increased public debt puts pressure on the government budget, and the importance of focusing on servicing existing debts rather than creating new debts. The government has an explicit debt target for external PPG debt of 50 percent of GDP and has taken steps to limit the contracting of additional debt to concessional borrowing. A new legal framework for the contracting and management of public debt is also being prepared, and the Ministry of Finance has been reorganized to merge the management of all debt (domestic and foreign) in one department. The government has also eliminated the contracting of central bank financing of off-budget investments.

18. The authorities highlight that a significant part of the external debt is related to large, commercially viable hydroelectric projects and do not foresee difficulties in servicing debt. They project that energy projects will generate high and stable economic returns upon completion and will supply enough foreign exchange to service debt. A relatively long maturity profile of loans, as well as U.S. dollar returns of the exporting sectors, would help mitigate the risks of debt distress. The authorities anticipate a decrease in disbursements of new funds from some bilateral donors between 2016 and 2022 given that the authorities are no longer allowed to start new investment projects not included in budget passed by the National Assembly. Borrowing is expected to shift from external to domestic sources over time, as domestic debt markets deepen and financing becomes cheaper.

CONCLUSION

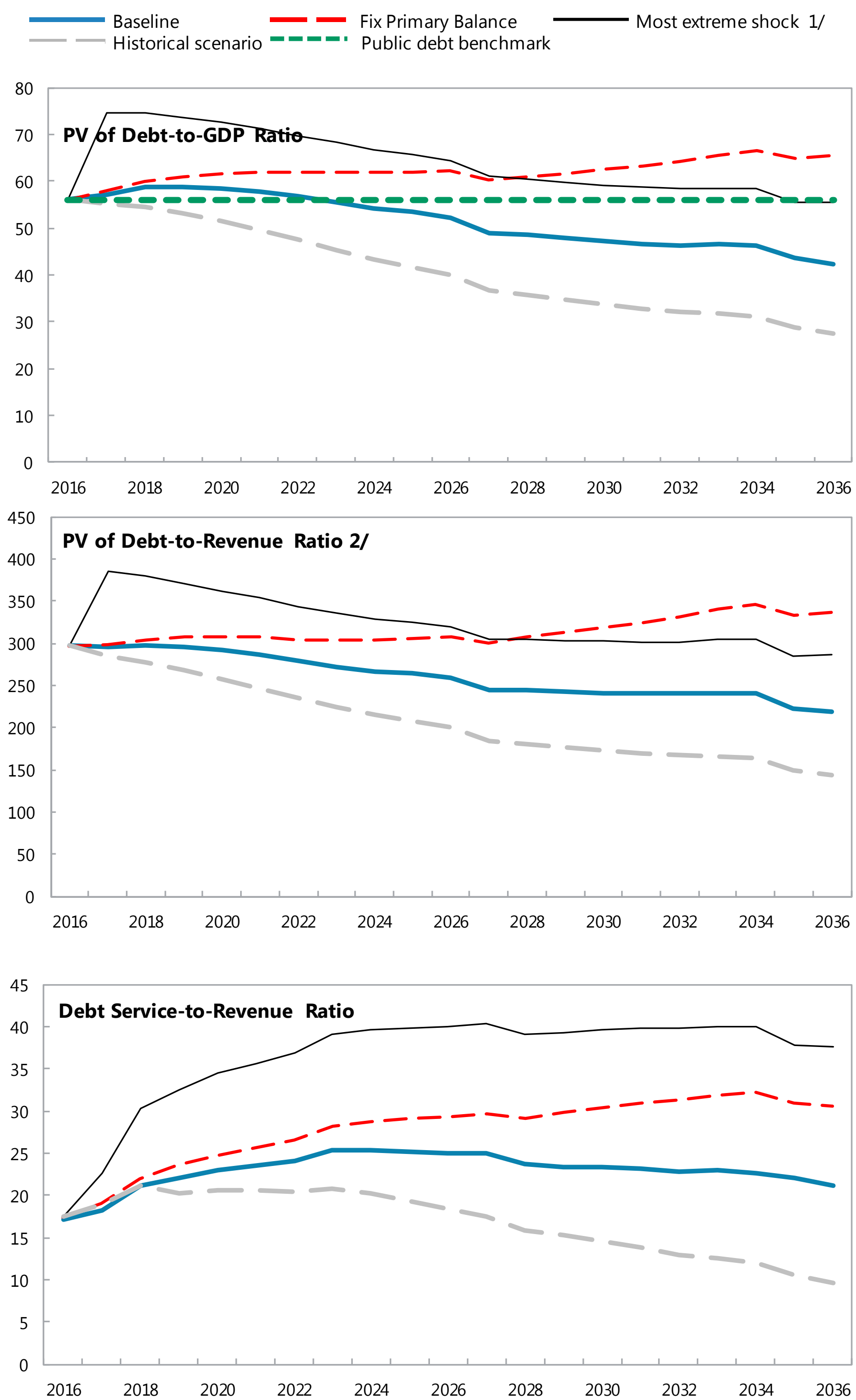
19. Lao P.D.R.'s risk of external debt distress is reclassified from moderate to high, suggesting the urgent need to tighten fiscal policy, strengthen public financial management, and develop a comprehensive medium-term debt management strategy. The PV of external debt-to-GDP ratio, the PV of external debt-to-revenue ratio, and debt service-to-revenue ratio breach the respective policy-dependent indicative thresholds for some years. Also, the PV of public sector debt-to-GDP ratio breaches the benchmark for some years. The projected increase in debt undermines fiscal space for countercyclical needs and potential banking sector or other contingent costs. Given the considerable share of foreign currency denominated debt, a large sudden exchange rate depreciation could significantly raise the level of those indicators, putting debt dynamics on an unsustainable path. To reduce debt burden, external borrowing should be contracted on concessional terms as much as possible. The authorities should recalibrate fiscal policy to rebuild fiscal buffers through stronger revenue mobilization efforts and expenditure rationalization, adopt clear guidelines for the issuance of sovereign debt and guarantees to help contain and monitor contingent liabilities, and accelerate the strengthening of the debt management function including developing a comprehensive medium-term debt management strategy and a regular debt sustainability analysis to inform borrowing decisions.

Figure 1. Lao P.D.R.: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2016–36 1/



Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio on or before 2026. In figure b. it corresponds to a One-time depreciation shock; in c. to a Non-debt flows shock; in d. to a One-time depreciation shock; in e. to a Non-debt flows shock and in figure f. to a One-time depreciation shock

Figure 2. Lao P.D.R.: Indicators of Public Debt Under Alternative Scenarios, 2016–36 1/



Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio on or before 2026.
2/ Revenues are defined inclusive of grants.

Table 1. Lao P.D.R.: External Debt Sustainability Framework, Baseline Scenario, 2013–36 1/

(Percent of GDP, unless otherwise indicated)

	Actual			Historical 6/	Standard 6/	Projections									
				Average	Deviation							2016-2021			2022-2036
	2013	2014	2015			2016	2017	2018	2019	2020	2021	Average	2026	2036	Average
External debt (nominal) 1/	**86.9**	**92.7**	**95.5**			**98.1**	**100.2**	**100.4**	**99.5**	**97.4**	**94.4**		**78.0**	**44.5**	
of which: public and publicly guaranteed (PPG)	50.9	51.1	51.7			54.1	55.6	55.7	54.5	52.7	50.3		37.6	22.8	
Change in external debt	-4.4	5.8	2.8			2.6	2.1	0.2	-0.9	-2.1	-3.0		-3.2	-1.8	
Identified net debt-creating flows	9.4	5.0	0.8			-0.1	1.3	0.1	0.8	1.9	-0.4		-2.3	0.0	
Non-interest current account deficit	**28.0**	**18.5**	**15.4**	**18.6**	**5.9**	**14.3**	**16.0**	**17.0**	**17.3**	**16.1**	**13.6**		**9.2**	**7.5**	9.5
Deficit in balance of goods and services	29.9	24.8	21.3			17.0	20.1	20.8	20.5	18.9	15.9		10.0	8.3	
Exports	43.2	46.3	42.0			42.1	41.7	41.5	40.5	38.9	39.1		37.4	33.4	
Imports	73.1	71.1	63.3			59.1	61.8	62.3	60.9	57.8	54.9		47.5	41.7	
Net current transfers (negative = inflow)	-2.2	-6.6	-6.4	-3.4	1.7	-3.6	-4.1	-4.0	-3.8	-3.6	-3.4		-2.7	-1.3	-2.2
of which: official	-1.4	-5.1	-5.0			-2.2	-2.8	-2.7	-2.6	-2.3	-2.2		-1.7	-0.5	
Other current account flows (negative = net inflow)	0.4	0.2	0.5			0.9	0.1	0.2	0.7	0.8	1.1		1.8	0.5	
Net FDI (negative = inflow)	**-8.5**	**-7.9**	**-10.8**	**-7.7**	**3.1**	**-11.2**	**-11.6**	**-13.5**	**-12.8**	**-10.7**	**-10.0**		**-8.1**	**-5.8**	-7.5
Endogenous debt dynamics 2/	**-10.2**	**-5.6**	**-3.8**			**-3.2**	**-3.2**	**-3.4**	**-3.7**	**-3.5**	**-4.0**		**-3.4**	**-1.7**	
Contribution from nominal interest rate	1.6	2.2	1.4			2.8	2.9	2.7	2.6	2.8	2.2		1.3	0.6	
Contribution from real GDP growth	-6.3	-6.3	-6.5			-6.1	-6.1	-6.1	-6.3	-6.3	-6.1		-4.7	-2.3	
Contribution from price and exchange rate changes	-5.4	-1.5	1.3			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	**-13.7**	**0.8**	**2.0**			**2.7**	**0.8**	**0.0**	**-1.7**	**-4.0**	**-2.5**		**-0.9**	**-1.7**	
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/	...	...	83.9			86.3	88.4	88.7	88.2	86.6	84.3		70.8	39.8	
In percent of exports	...	...	199.9			205.2	211.8	213.5	217.9	222.7	215.8		189.1	119.1	
PV of PPG external debt	**...**	**...**	**40.1**			**42.3**	**43.7**	**44.0**	**43.3**	**42.0**	**40.2**		**30.4**	**18.1**	
In percent of exports	**...**	**...**	**95.5**			**100.5**	**104.8**	**106.0**	**106.9**	**107.8**	**103.0**		**81.1**	**54.3**	
In percent of government revenues	**...**	**...**	**218.1**			**257.2**	**263.2**	**258.5**	**249.6**	**236.9**	**224.6**		**164.2**	**96.1**	
Debt service-to-exports ratio (in percent)	**13.6**	**12.8**	**12.3**			**20.6**	**22.1**	**23.1**	**24.3**	**25.7**	**24.6**		**20.8**	**8.9**	
PPG debt service-to-exports ratio (in percent)	**5.1**	**5.6**	**5.2**			**7.1**	**7.7**	**9.1**	**9.8**	**10.5**	**10.7**		**11.0**	**8.9**	
PPG debt service-to-revenue ratio (in percent)	**12.3**	**14.2**	**11.9**			**18.2**	**19.4**	**22.3**	**22.9**	**23.1**	**23.3**		**22.3**	**15.7**	
Total gross financing need (Billions of U.S. dollars)	2.7	2.0	1.2			1.6	2.0	2.1	2.5	3.0	2.8		2.8	3.2	
Non-interest current account deficit that stabilizes debt ratio	32.4	12.8	12.6			11.7	14.0	16.8	18.2	18.2	16.5		12.3	9.2	
Key macroeconomic assumptions															
Real GDP growth (in percent)	8.0	8.0	7.5	7.9	0.3	6.9	6.8	6.7	6.9	6.9	6.8	6.8	6.3	5.5	6.0
GDP deflator in US dollar terms (change in percent)	6.3	1.7	-1.4	8.2	7.3	2.2	1.2	2.0	2.3	2.2	2.1	2.0	2.1	2.8	2.1
Effective interest rate (percent) 5/	2.0	2.8	1.7	1.9	0.4	3.3	3.2	3.0	2.8	3.0	2.4	3.0	1.8	1.4	1.7
Growth of exports of G&S (US dollar terms, in percent)	19.6	17.6	-3.9	20.6	19.4	9.5	7.2	8.3	6.5	5.0	9.5	7.7	5.9	4.7	7.2
Growth of imports of G&S (US dollar terms, in percent)	17.3	6.9	-5.7	20.0	14.2	2.0	13.0	9.8	6.9	3.6	3.7	6.5	6.1	5.5	6.3
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	22.6	21.6	21.1	20.2	19.3	18.2	20.5	15.3	14.7	15.3
Government revenues (excluding grants, in percent of GDP)	17.9	18.1	18.4			16.4	16.6	17.0	17.3	17.7	17.9		18.5	18.9	18.6
Aid flows (in Billions of US dollars) 7/	0.6	0.6	0.5			0.5	0.6	0.6	0.6	0.6	0.6		0.6	0.5	
of which: Grants	0.6	0.6	0.5			0.3	0.4	0.4	0.5	0.5	0.5		0.5	0.4	
of which: Concessional loans	0.0	0.0	0.0			0.2	0.2	0.2	0.2	0.1	0.1		0.1	0.1	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			4.2	4.4	4.2	3.8	3.4	3.2		2.3	0.9	1.8
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			40.7	42.4	42.7	43.6	43.5	44.0		40.6	28.0	35.5
Memorandum items:															
Nominal GDP (Billions of US dollars)	10.8	11.9	12.6			13.7	14.8	16.1	17.6	19.3	21.0		32.0	69.3	
Nominal dollar GDP growth	14.8	9.9	6.0			9.2	8.1	8.8	9.3	9.3	9.1	9.0	8.5	8.5	8.3
PV of PPG external debt (in Billions of US dollars)			5.1			5.8	6.5	7.1	7.6	8.0	8.4		9.7	11.9	
(PVt-PVt-1)/GDPt-1 (in percent)						5.6	5.1	4.1	3.2	2.5	1.9	3.8	0.7	0.3	0.7
Gross workers' remittances (Billions of US dollars)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of PPG external debt (in percent of GDP + remittances)	...	...	40.1			42.3	43.7	44.0	43.3	42.0	40.2		30.4	18.1	
PV of PPG external debt (in percent of exports + remittances)	...	...	95.5			100.5	104.8	106.0	106.9	107.8	103.0		81.1	54.3	
Debt service of PPG external debt (in percent of exports + remittance	...	...	5.2			7.1	7.7	9.1	9.8	10.5	10.7		11.0	8.9	

Sources: Country 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 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 c

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 2. Lao P.D.R.: Public Sector Debt Sustainability Framework, Baseline Scenario, 2013–36

(Percent of GDP, unless otherwise indicated)

	Actual					Estimate			Projections						
	2013	2014	2015	Average 5/	Standard Deviation 5/	2016	2017	2018	2019	2020	2021	2016-21 Average	2026	2036	2022-36 Average
Public sector debt 1/	62.5	64.9	65.8			67.8	69.0	70.3	70.0	69.1	67.9		59.5	47.0	
of which: foreign-currency denominated	50.9	51.1	51.7			54.1	55.6	55.7	54.5	52.7	50.3		37.6	22.8	
Change in public sector debt	5.4	2.4	0.9			2.1	1.2	1.3	-0.2	-0.9	-1.3		-1.5	-1.1	
Identified debt-creating flows	-0.6	-1.4	-0.4			0.8	0.0	-0.4	-0.9	-1.0	-0.8		-0.4	0.8	
Primary deficit	4.1	3.0	2.4	1.9	1.3	4.4	3.7	3.5	3.3	3.2	3.2	3.5	2.7	2.4	2.5
Revenue and grants	23.4	23.3	22.7			18.9	19.4	19.7	19.9	20.1	20.2		20.2	19.4	
of which: grants	5.5	5.2	4.3			2.4	2.8	2.7	2.6	2.3	2.3		1.7	0.5	
Primary (noninterest) expenditure	27.5	26.3	25.0			23.2	23.0	23.2	23.2	23.2	23.3		22.9	21.8	
Automatic debt dynamics	-4.7	-4.4	-2.7			-3.5	-3.7	-3.8	-4.2	-4.2	-4.0		-3.2	-1.5	
Contribution from interest rate/growth differential	-3.9	-3.5	-3.7			-4.0	-3.8	-3.9	-4.1	-4.1	-4.0		-3.2	-2.4	
of which: contribution from average real interest rate	0.3	1.1	0.8			0.3	0.5	0.5	0.4	0.4	0.4		0.4	0.1	
of which: contribution from real GDP growth	-4.2	-4.6	-4.5			-4.3	-4.3	-4.3	-4.5	-4.5	-4.4		-3.6	-2.5	
Contribution from real exchange rate depreciation	-0.8	-0.9	1.0			0.5	0.2	0.0	-0.1	-0.1	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	6.0	3.8	1.3			1.2	1.2	1.6	0.6	0.1	-0.4		-1.1	-1.9	
Other Sustainability Indicators															
PV of public sector debt	...	...	54.1			56.0	57.2	58.6	58.8	58.4	57.8		52.3	42.4	
of which: foreign-currency denominated	...	...	40.1			42.3	43.7	44.0	43.3	42.0	40.2		30.4	18.1	
of which: external	...	...	40.1			42.3	43.7	44.0	43.3	42.0	40.2		30.4	18.1	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	12.8	8.7	9.1			11.9	11.4	11.8	12.1	12.4	12.8		13.9	11.6	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	238.9			297.0	295.2	297.4	295.2	291.1	286.4		259.4	218.3	
PV of public sector debt-to-revenue ratio (in percent)	...	...	294.9			340.9	344.3	344.1	339.0	329.7	322.6		282.9	224.4	
of which: external 3/	...	...	218.1			257.2	263.2	258.5	249.6	236.9	224.6		164.2	96.1	
Debt service-to-revenue and grants ratio (in percent) 4/	10.9	8.8	10.7			17.2	18.3	21.1	22.1	22.9	23.5		25.0	21.1	
Debt service-to-revenue ratio (in percent) 4/	14.3	11.2	13.2			19.8	21.3	24.4	25.4	26.0	26.5		27.2	21.7	
Primary deficit that stabilizes the debt-to-GDP ratio	-1.3	0.6	1.5			2.3	2.5	2.2	3.6	4.1	4.4		4.2	3.4	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	8.0	8.0	7.5	7.9	0.3	6.9	6.8	6.7	6.9	6.9	6.8	6.8	6.3	5.5	6.0
Average nominal interest rate on forex debt (in percent)	2.0	3.4	1.9	1.5	0.8	2.4	2.5	2.6	2.6	2.6	2.7	2.6	2.7	2.9	2.8
Average real interest rate on domestic debt (in percent)	0.8	2.9	5.5	-1.5	5.5	0.0	1.5	1.3	0.9	0.8	0.9	0.9	1.0	-0.5	0.6
Real exchange rate depreciation (in percent, + indicates depreciation	-1.9	-1.9	2.0	-5.6	7.4	0.9	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	4.1	4.5	0.0	5.3	5.1	2.3	2.3	2.7	3.1	3.3	3.2	2.8	3.2	2.8	3.2
Growth of real primary spending (deflated by GDP deflator, in percer	22.5	3.4	2.3	2.9	7.0	-0.9	6.0	7.3	7.0	7.0	7.3	5.6	5.5	0.0	5.2
Grant element of new external borrowing (in percent)	...	...	...	...	...	22.6	21.6	21.1	20.2	19.3	18.2	20.5	15.3	14.7	...

Sources: Country authorities; and staff estimates and projections.

1/ Public sector debt covers general government and 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 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 3. Lao P.D.R.: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2016–36

(Percent)

	Projections							
	2016	2017	2018	2019	2020	2021	**2026**	2036
PV of debt-to GDP ratio								
Baseline	42	44	44	43	42	40	**30**	18
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	42	47	51	53	54	55	**62**	56
A2. New public sector loans on less favorable terms in 2016-2036 2/	42	45	47	47	47	46	**39**	30
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	42	43	43	42	41	39	**30**	17
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	42	46	50	49	48	45	**33**	17
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	42	44	44	44	42	41	**31**	17
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	42	52	62	60	58	55	**37**	18
B5. Combination of B1-B4 using one-half standard deviation shocks	42	46	49	48	47	44	**31**	16
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	42	62	62	61	59	57	**43**	24
PV of debt-to-exports ratio								
Baseline	101	105	106	107	108	103	**81**	54
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	101	112	122	131	138	141	**167**	168
A2. New public sector loans on less favorable terms in 2016-2036 2/	101	108	113	117	121	118	**104**	89
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	101	104	106	106	107	102	**81**	51
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	101	116	137	137	138	132	**99**	59
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	101	104	106	106	107	102	**81**	51
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	101	124	149	149	149	141	**99**	53
B5. Combination of B1-B4 using one-half standard deviation shocks	101	112	121	121	122	116	**85**	49
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	101	104	106	106	107	102	**81**	51
PV of debt-to-revenue ratio								
Baseline	257	263	258	250	237	225	**164**	96
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	257	281	298	306	303	308	**338**	298
A2. New public sector loans on less favorable terms in 2016-2036 2/	257	272	276	273	266	258	**212**	157
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	257	260	253	244	232	220	**161**	89
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	257	275	295	283	268	253	**177**	92
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	257	263	261	252	239	226	**165**	92
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	257	312	362	347	328	307	**201**	94
B5. Combination of B1-B4 using one-half standard deviation shocks	257	278	289	278	263	247	**170**	86
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	257	373	366	353	335	317	**232**	129

Table 3. Lao P.D.R.: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2016–36 (concluded)

(Percent)

Debt service-to-exports ratio								
Baseline	7	8	9	10	11	11	**11**	9
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	7	7	8	9	9	10	**14**	15
A2. New public sector loans on less favorable terms in 2016-2036 2/	7	8	8	8	8	9	**12**	13
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	7	8	9	10	11	11	**11**	9
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	7	8	11	12	13	13	**14**	10
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	7	8	9	10	11	11	**11**	9
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	7	8	10	11	12	14	**15**	9
B5. Combination of B1-B4 using one-half standard deviation shocks	7	7	9	10	11	12	**12**	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	7	8	9	10	11	11	**11**	9
Debt service-to-revenue ratio								
Baseline	18	19	22	23	23	23	**22**	16
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	18	18	20	21	21	22	**28**	27
A2. New public sector loans on less favorable terms in 2016-2036 2/	18	19	19	19	18	20	**24**	23
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	18	19	22	23	23	23	**22**	15
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	18	19	23	24	24	25	**25**	16
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	18	19	23	23	23	24	**23**	16
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	18	19	24	27	26	30	**29**	16
B5. Combination of B1-B4 using one-half standard deviation shocks	18	19	22	23	23	25	**24**	15
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	18	28	32	33	33	33	**32**	22
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	11	11	11	11	11	11	**11**	11

Sources: Country 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.

Table 4. Lao P.D.R.: Sensitivity Analysis for Key Indicators of Public Debt 2016–2036

	Projections							
	2016	2017	2018	2019	2020	2021	2026	2036
PV of Debt-to-GDP Ratio								
Baseline	56	57	59	59	58	58	52	42
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	56	55	54	53	51	50	40	28
A2. Primary balance is unchanged from 2016	56	58	60	61	62	62	62	65
A3. Permanently lower GDP growth 1/	56	57	59	59	59	58	53	45
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-2018	56	57	57	57	57	56	49	38
B2. Primary balance is at historical average minus one standard deviations in 2017-2018	56	57	58	58	58	57	52	42
B3. Combination of B1-B2 using one half standard deviation shocks	56	56	56	56	55	54	48	36
B4. One-time 30 percent real depreciation in 2017	56	74	75	74	73	71	64	55
B5. 10 percent of GDP increase in other debt-creating flows in 2017	56	66	67	67	66	65	58	46
PV of Debt-to-Revenue Ratio 2/								
Baseline	297	295	297	295	291	286	259	218
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	297	284	277	268	257	247	200	143
A2. Primary balance is unchanged from 2016	297	298	304	307	307	307	308	337
A3. Permanently lower GDP growth 1/	297	295	298	296	292	288	264	231
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-2018	297	293	291	288	283	277	246	194
B2. Primary balance is at historical average minus one standard deviations in 2017-2018	297	293	294	292	288	283	257	216
B3. Combination of B1-B2 using one half standard deviation shocks	297	288	284	280	275	270	238	187
B4. One-time 30 percent real depreciation in 2017	297	384	379	370	362	354	319	286
B5. 10 percent of GDP increase in other debt-creating flows in 2017	297	342	342	337	330	324	290	239
Debt Service-to-Revenue Ratio 2/								
Baseline	17	18	21	22	23	24	25	21
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	17	19	21	20	21	21	18	10
A2. Primary balance is unchanged from 2016	17	19	22	24	25	26	29	31
A3. Permanently lower GDP growth 1/	17	19	22	23	24	24	25	18
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-2018	17	19	22	22	23	23	23	14
B2. Primary balance is at historical average minus one standard deviations in 2017-2018	17	19	22	22	23	24	24	17
B3. Combination of B1-B2 using one half standard deviation shocks	17	19	21	21	22	23	22	13
B4. One-time 30 percent real depreciation in 2017	17	23	30	33	34	36	40	38
B5. 10 percent of GDP increase in other debt-creating flows in 2017	17	19	24	33	25	27	29	20

Sources: Country 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.