European Commission – ENPI

Framework Contract Beneficiaries 2013
EuropeAid/132633/C/SER/Multi
Lot 11: Macro economy, Statistics and Public Finance Management

Request n° 2015/366005/1

Support to the Public Debt Management Department of the Armenian Ministry of Finance.

TECHNICAL REPORT # 3 ON THE 2018-2020 MEDIUM-TERM DEBT MANAGEMENT STRATEGY

August 2017

Project financed by the European Union

Project implemented by DFC and Alternative Consulting

Support to the Public Debt Management Department of the Armenian Ministry of Finance.

Request n° 2015/366005/1

TECHNICAL REPORT # 3 ON THE 2018-2010 MEDIUM-TERM DEBT MANAGEMENT STRATEGY

August 2017

Jean-Luc STEYLAERS,
Team Leader

Alessandro SCIPIONI,
Public Debt Expert

DFC CONSORTIUM

Table of contents

Glossary of acronyms

AMD	Armenia Drams
BO	Back Office
CBA	Central Bank of Armenia
DBPM	Department of Budget Process Management
DeMPA	Debt Management Performance Assessment
DMFAS	Debt Management and Financial Analysis System
DMP	Department of Macroeconomic Policy
DSA	Debt Sustainability Analysis
FO	Front Office
GDP	Gross Domestic Product
GoRA	Government of the Republic of Armenia
ICD	International Cooperation Department
IMF	International Monetary Fund
MO	Middle Office
MOF	Ministry of Finance
MoFA	Ministry of Foreign Affairs
MoJ	Ministry of Justice
MTDS	Medium-Term Debt Management Strategy
MTEF	Medium Term Expenditure Framework
PDMD	Public Debt Management Department
RA	Republic of Armenia
UNCTAD	United Nations Conference on Trade and Development
WB	Worldbank
USD	United States Dollars

Part 1: Evaluation of the 2018-2010 MTDS.

1. Introduction

Every year, the Ministry of Finance (MoF) of the Republic of Armenia publishes a document called the *RA Government Debt Management Strategy* which aims at defining the objectives of government debt management, and at presenting to the investors (and to the public) the strategy to manage government debt in the medium-term (for the upcoming 3 years).

This document is prepared in June when the Macroeconomic Department sends to the Public Debt Management Department (PDMD) the latest macro-fiscal projections of the Medium-Term Expenditure Framework (MTEF). The PDMD prepares the Strategy and publishes it, usually, in July on the MoF website.

The Medium-Term Debt Management Strategy (MTDS) for the period 2018-2020 has been completed and submitted to the European Union experts on July 14th, 2017 for their review and comments. The present note evaluates the quality of the MTDS 2018-2020 document.

2. General Comments

EU experts made specific comments, in track changes mode, directly in the MTDS document submitted to them by local authorities. The final version of the MTDS 2018-2020 published on the website of the Ministry of Finance took into account many of the comments made by the experts.
The other comments will be considered when the revision of the MTDS 2018-2020 will take place in December 2017. Indeed, the authorities agreed with the experts' recommendation to prepare the MTDS in December and, then, to revise it in June each year.

The MTDS document itself was improved in 2016 for the publication of the MTDS 2017-2019. It is in line with international standards. From that perspective, the document covers all the necessary elements of a good strategy document, in line with best international practices[1].

The debt management strategy was also changed in 2016. Indeed, for the first time, the PDMD formally based the documented strategy on a Cost-at-risk analysis made by the Middle Officer, using the MTDS toolkit of the IMF and World Bank (Excel Spreadsheet).

Basically, this analysis uses different inputs (Cash flows projections of the existing government debt portfolio, External Debt new borrowing terms and conditions, Budget forecasts for the next 3 years, macroeconomic assumptions for the next 3 years, alternatives financing strategies) to evaluate exchange rates and interest rates shocks on the baseline scenario and impact on future debt cashflows. Thus, the model will calculate new cost and risk indicators for the alternatives strategies under baseline scenario and shock scenarios and allow authorities to select the best strategy according to the cost-risk tradeoff[2].

The MTDS 2018-2020 follows the new format established in 2016, with new targets and new benchmark indicators to monitor the performance of debt management, in line with international standards.

[1] For a detailed discussion on strategy document best practices, please refer to the EU consultant report from June 2016, *Support to the Public Debt Management Department of the Armenian Ministry of Finance*, *Report on the MTDS*.
[2] For a detailed discussion on the MTDS methodology, please refer to the EU consultant report from June 2016, *Support to the Public Debt Management Department of the Armenian Ministry of Finance*, *Report on the MTDS.* Or the World Bank and IMF user guide from May 2012, *MTDS the analytical tool.*

3. Strategy 2018-2020

Considering approximately 80% of the existing government debt portfolio is denominated in foreign currencies, the portfolio is highly exposed to exchange rate variation, in other words, local currency depreciation.

However, most of the existing external debt is on concessional or semi-concessional terms. It means, there is an important exposure to automatic debt dynamics – if AMD depreciates against other currencies, the total outstanding debt amount in local currency will increase and the Debt/GDP ratio may increase as well – but the medium-term risk (horizon 2020) is limited because most of the concessional/semi-concessional external debt will mature in the long-term (exposure to exchange rate risk from annual/semi-annual interest payment is limited considering low interest rates of concessional debt). In any case, the debt manager cannot change quickly an existing portfolio comprised of a big stock of external concessional debt into something else.

As consequence, medium-term risks mainly arise from market debt: domestic debt (denominated in AMD) and Eurobonds denominated in US dollars maturing in 2020. In 2020, the Ministry of Finance will face, for the first time, a major challenge with the redemption of a Eurobond (USD 500 million). This complicates the MTDS 2018-2020 because it is an important amount that represents roughly 10% of the government debt portfolio.

Considering the strategy aims principally at reducing exchange rate risk, the only way to achieve this objective is refinancing part of the Eurobonds to be rolled over in 2020 with domestic debt (please see section on Recommendations). The strategy does not mention explicitly this possibility.

On the contrary, the strategy seems to suggest that net financing through domestic sources will only slightly and gradually increase compared to the current 45 billion AMD per year, to reach a maximum of 50 billion in 2020.

Additionally, projections show that with the scheduled amount of net financing through domestic sources, government debt portfolio will have a share of 79,9% of debt denominated in foreign currencies in the total debt in 2020, which is exactly the same share as in the current portfolio.

Furthermore, the capacity of the market to absorb more than 50 billion AMD does not seem to be a major constraint, considering that in 2016 the Ministry ended up with a net financing through domestic sources of 171 billion AMD. Therefore, the amount of 50 billion AMD seems very conservative. Increasing the amount of debt issued in the domestic market will, of course, come at a cost because domestic debt instruments pay a high interest.
But the advantage would be to promote the domestic debt market development and reduce exchange rate risk and refinancing risk.

4. Conclusions

Overall, the MTDS 2018-2020 is a very good document in line with international standards. It follows appropriately the new format established in 2016, with indicators to monitor the performance of debt management.

However, in 2020, the PDMD will face, for the first time, a major challenge with the redemption of a Eurobond (USD 500 million). This complicates the MTDS 2018-2020 because it is an important amount that represents roughly 10% of the government debt portfolio.

During their mission in July 2017, the experts highlighted that the principal consequence for the MTDS 2018-2020 was that the PDMD has, in practice, two strategies – one for the domestic market securities and one for the foreign currency debt securities (Eurobonds) – instead of a single integrated strategy.

The PDMD understood the issue and wants to tackle it in December 2017 when the MTDS 2018-2020 will be reviewed and the financing plan for 2018 presented to the market. However, this is the first time they face such a situation, and they lack experience to deal with this kind of strategy integration. Thus, it would be important to schedule a mission of the EU experts in December 2017 to support them.

In the end, integrating the two strategies would translate into refinancing part of the Eurobonds maturing in 2020 with domestic debt. This could be done in the next 3 years, rather than in 2020 only. Of course, the establishment of such cash buffers will come at a cost (cost of carry: starting to borrow now at a market interest rate to keep reserves to repay partially the Eurobond in 2020).

But, it would have the advantage of reducing exchange rate risk and refinancing risk in 2020. Furthermore, it would create some space in case of major financial shock in the future to borrow again in the international market if the local market dries up. It would also be coherent with the objective of developing the domestic debt market. PDMD Middle Office could run a simulation in the MTDS toolkit to see what would be the cost increase and the risk reduction to issue more domestic debt during the next 3 years. For example, one could simulate a net domestic financing amount of 100 billion AMD rather than 50 billion. This will allow quantifying cost-risk tradeoff of an integrated strategy.

Part II: 2018-2020 MTDS.

Appendix

To the Decision of the Government of the Republic of Armenia N of 6 July 6, 2017

2018-2020 GOVERNMENT DEBT MANAGEMENT STRATEGY OF THE REPUBLIC OF ARMENIA

Content

Introduction

The RA Government Debt Management Strategy sets out the plan for attracting the necessary borrowings to finance the state budget deficit, as well as it manages the risks associated with the Government debt portfolio. It is published annually and contributes to the predictable and transparent management of the Government debt.

Government debt management strategy clarifies the borrowing policy including Government debt management benchmark indicators. It identifies the Government debt management risks, as well as outlines the principles, targets and measures to be implemented under which the Government will not put the fiscal sustainability at risk.

Debt management plays an important role in the public finance management process especially in middle or low income countries, where, with limited resources, the Government has to borrow to implement the fiscal policy contributing to the economic growth.

The Ministry of Finance applies a cost-at-risk analysis using, among others, approaches developed by the WB and IMF, in order to formulate the desired composition of Government debt portfolio. The analysis allows determining the costs and risks indicators of the Government debt portfolio and assessing the possible impact of shocks on the portfolio. While drafting the Government debt management strategy, constrains were taken into account, including the absorption capacity of the domestic debt market and the limited access to external concessional borrowing.

Generally, the RA Government debt management strategy presents the preferable option between possible costs-at-risks tradeoffs (the baseline scenario) that result from macro-fiscal forecasts made by government. The selection of the strategy is based on the principles of meeting financial needs with acceptable costs and ensuring Government debt sustainability.

Objectives and scope of the RA Government Debt Management Strategy

The RA Government debt management strategy is developed in line with the Law of the Republic of Armenia of the Republic of Armenia "On State Debt" approved in 2008.

The Law “On State Debt” specifies: “The main objective of the Government debt management shall be ensuring permanent capacity of meeting financial demands of the Government, thus reducing the size of debt servicing in the long-term perspective.” The following objectives of the Government debt management are also defined in the law: a) optimization of the structure of the Government debt with consideration of potential risks, b) coordination of public debt management and monetary policies. In other words, the objective of the debt management strategy can be described as achieving a desired composition of the debt portfolio that minimizes the borrowing costs without significantly increasing risks.
The scope of the strategy is limited only to the Government debt, including guaranties issued by the Government. The analysis does not include the RA Central Bank’s external debt, which is assumed on behalf of and by CBA. In addition, the debt management objectives of CBA are defined by the Law of the Republic of Armenia “On Central Bank”, according to the Law of the Republic of Armenia “On State Debt”.

The developments observed in Government debt management from the beginning of 2016 to June 2017

- At the end of 2016 “Government debt/Previous Year GDP” ratio reached 52.2%, exceeding 50% fiscal threshold defined by the Law of the Republic of Armenia “On State Debt” for the first time. As a result, 2017 State budget deficit was planned taking into account the fiscal constraint defined by the Law of the Republic of Armenia “On State Debt” (If the Government debt as of December 31 of the given year exceeds 50% of the previous year GDP, the budget deficit of the next year shall not exceed 3% of the average index of GDP’s of the last three years).

- The average time to maturity benchmark indicator was within the defined 8-11 years range: amounting to 9.3 years at the end of 2016.

- In 2016 net domestic borrowing (excluding promissory notes) actually comprised AMD 171.0 billion against planned AMD 42.0 billion. The reason was extra allocations of Government securities for the purpose of smoothing cash flows and managing the risks.

- On April 13, 2017 the Government approved by the Decision No 381 the revised regulation on issue, allocation, buyback, circulation and maturity of T-bills and T-Bonds, regulation on issue, allocation, buyback and maturity of saving bonds, as well as regulation on activities of Treasury Direct. It was aimed to improve the primary and retail markets of the Government securities and establish online selling system.

- The Government securities auction system was moved to Nasdaq OMX Armenia OJSC from the CBA. This provided an opportunity to carry out the primary allocations of GS’s with contemporary software solutions and to use a trading platform that provides possibilities for fulfilling transactions with debt management instruments. The transactions with GS’s are now carried out with T+n principle separating the auction day from the settlement day, which allows the primary market participants to manage more efficiently their cash flows.

- The on-line system of Government securities retail sale through the Treasury Direct was launched, which would contribute to increase government securities visibility and interest from the public.

- On 8 June, 2017 Ministry of Finance successfully allocated AMD 25.2 billion debut 30-year local currency Treasury Bonds. The bid-to-cover ratio was 2.1% and weighted average yield was 13.58%.

- The Government continued cooperation with the creditors providing concessional loans. The benchmark indicator for concessionality of new loan agreements was set up 30% as a result of mutual agreement between the Republic of Armenia and IMF. In 2016 the average level of new concessional loans amounted 33.0%.

- In 2016, the amount of allocated Government securities (GS) reached AMD 319.5 billion in nominal value, of which the proceeds was AMD 300.3 billion. The amount of GS redeemed and bought back summed up AMD 129.3 billion and AMD 42.0 billion interest payment was made.

- In 2016, disbursements from the external loans amounted to USD 570.9 million, while during that period principal repayments of external loans totaled USD 71.1 million and interest payments made up USD 53.0 million. Interest payment for Eurobonds was USD 65.8 million.

2018-2020 RA Government Debt Management Strategy

Macroeconomic assumptions and key risk factors

Macroeconomic indicators used in evolving debt strategy should be consistent with the forecasted macroeconomic framework applicable to developing fiscal policy. Therefore, Government debt management strategy is based on macroeconomic forecasts that are complied with the macroeconomic estimates of 2018-2020 MTEF.

Realistic macroeconomic forecasts are important inputs of cost-at-risk analysis, as the deviations from the macroeconomic assumptions can essentially change the level and direction of risk indicators. In other words, fluctuations of market variables and macroeconomic indicators can have a significant impact on the Government debt risk indicators. For example, a lower GDP growth or significant increase of the budget deficit may substantially deteriorate the cost and risk indicators.

The macro-fiscal indicators on which the 2018-2020 Government debt management strategy is based are presented in the following table:

Table 1: Indicators underlying 2018-2020 RA Government debt management strategy (AMD billion)

	2018 forecast	2019 forecast	2020 forecast
GDP (nominal)	5,785.6	6,341.1	6,974.3
State budget revenues	1,353.5	1,489.6	1,643.8
State budget primary expenditures	1,373.7	1,495.2	1,614.2

The 2018-2020 Government debt management strategy is based on the assumptions that the macroeconomic environment would have an improvement and the moderate monetary conditions would be preserved. The shocks emanating from the external economic environment can evoke certain risks for achieving strategic targets.

Targets and measures to be implemented

- As of December 31 of each year, the “Government debt/Previous Year GDP” ratio will not exceed the 60% threshold defined by the article 5 of the Law of the Republic of

Armenia "On State Debt". Forecasts indicate that during the whole period of 2018-2020, “Government debt/Previous Year GDP” ratio would exceed 50%, therefore according to the Law of the Republic of Armenia “On State Debt” (article 5, point 7), state budget deficit cannot exceed 3% of the average GDPs of the past 3 years.

Table 2: 2017-2020 Government debt indicators

	2017 budget program	2018 forecast	2019 forecast	2020 forecast
Government debt (AMD billion)	2,802	3,160	3,391	3,559
in % to GDP	51.8	54.6	53.5	51.0
in % to Previous Year GDP	51.5	59.0	58.6	56.1

- In the medium-term, the share of the state budget deficit financed from the domestic sources will increase, along with the targeted change of the structure and composition of market participants, as well as the significant increase in the number of market participants. It will tend to reduce the foreign exchange risk, as well as will lay bases in the financial market for using new instruments (floating, index linked, targeted and etc.) and for further market development. It will be possible to increase deficit financing from domestic sources due to the pension and insurance reforms in coming years.

- Increasing the volumes of outstanding GS will boost the liquidity of bonds which is one of the objectives of the domestic debt management.

- The Government will accumulate financial resources and build up buffers, taking the advantages of the favorable developments in the financial markets. In case of negative developments in the domestic and external markets, it will allow to reduce fiscal impact on the execution of State budget, as well as to adjust the deficit financing through GS if necessary.

- The Legislation regulating debt operations (especially the Law on Public Debt) will be reviewed in accordance with the best international practice within the fiscal rules reviewing framework.

- The most important factors of efficient debt management are transparency and permanent communication with the public. Therefore, the RA Government will

continue reporting on its activities and will go on open relations with investors and general public.

- The selected strategy envisages issuance of new Eurobonds during forecasted period to refinance 2020 Eurobond maturity. However, in the medium-term, Government reserves the right to issue new Eurobonds where it is appropriate. For instance, that could be the case if negative impact from the external environment increases risks associated with the implementation of the fiscal policy.

- The Ministry of Finance will continue buybacks and exchange of out-of-the run GS with the view to smooth debt repayment schedule and reduce refinancing risk, as well as to increase liquidity of the on-the-run Bonds and contribute to the development of the secondary market.

- The Government will continue its efforts aimed at improving the electronic system of Bonds exchange.

- Highlighting the development of the retail market of GS, actions will be taken to enlarge the scope of investors of saving bonds and prolong the tenor. In this respect, along with the actions directed to enhancing the confidence towards the Government, public awareness activities will be activated among investors.

- Cooperation with foreign creditors will be continued and deepen giving the preferences to collaborate with the creditors offering loans with concessional terms and hard currency.

- The Ministry of Finance will evaluate the possibility to convert floating interest rates loans into fixed ones in line with the procedures established by foreign creditors.

- In the medium-term, Government will make efforts to maintain the concessionality level of new external loans to an average benchmark level of 30%, as it was agreed with IMF.

- Government debt management strategy will be separated from the MTEF and will be approved at the end of each year. It would be revised during a year if there are significant changes in the macroeconomic environment or in the fiscal policy.

Benchmark indicators

To ensure an efficient management of Government debt portfolio, the risks inherent to the portfolio should be carefully identified and assessed. For this reason, Government debt management strategy defines benchmark targets aiming at keeping exchange rate, interest rate and refinancing risks under control. Of course, benchmark targets are defined taken into account the environment constraints inherent to Government debt management in Armenia.

Table 3: 2018-2020 Government debt management benchmark indicators

	Benchmarks
Refinancing risk	
Average Time to Maturity	8 – 11 years
The share of Treasury Securities maturing in the next year in total TS (at the end of the year)	maximum 20%
Interest rate risk	
The share of fixed rate debt in the total debt	at least 80%
Exchange rate risk	
The share of domestic debt in the total debt	at least 20%

State budget deficit financing

For 2018-2020 the forecast of State budget deficit financing by net borrowings is the following:

Table 4: 2017-2020 State budget deficit financing by net borrowings (AMD billion)

	2017 budget program	2018 forecast	2019 forecast	2020 forecast
State budget deficit financing by net borrowings	174.5	231.8	227.3	167.6
Of which:				
Domestic net borrowings (without promissory notes)	45.0	47.0	48.0	50.0
Share, (%)	25.8	20.3	21.1	29.8
External net borrowings	129.5	184.8	179.3	117.6
Share, (%)	74.2	79.7	78.9	70.2

While drafting the deficit financing structure by domestic net borrowing, the decreasing tendency of interest rates in international financial markets and the improvement of macroeconomic environment in Armenia were taken into account. Under these conditions, in the medium-term the reduction of treasury bonds' interest rates was forecasted. The

structure of new issuances was defined in a way that would not substantially increase the refinancing risk.

Cost-at-risk analysis of the Government debt existing portfolio

Regarding the costs of Government debt, the following indicators have been used to measure them: a) Weighted average interest rate of existing portfolio, b) Interest payments as percentage of state revenues, c) Interest payments to GDP ratio.

At the end of 2016 ”Weighted average interest rate of existing portfolio” indicator (ratio of current year debt interest amount to the debt stock at the end of the previous year) made up 4.4%. For external debt, the average interest rate was 2.9%, driven by the high proportion of concessional loans. This interest rate is going to increase in the future, as the international organizations are diminishing the amount of concessional lending to Armenia. The average interest rate of domestic debt was gradually reduced during the year and amounted to 13.1% at the end of the 2016. It was still higher at the beginning of 2016 as a result of the exchange rate shock aroused at the end of 2014.

In 2016 Government interest payments amounted to AMD 98.3 billion, which represents 8.4% of state budget revenues and 1.9% of GDP.

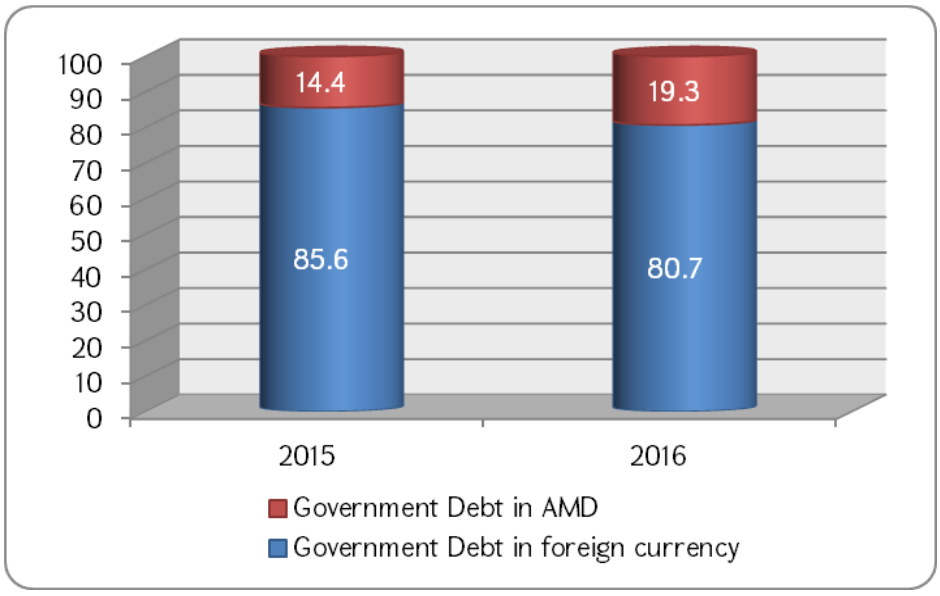
Both indicators denote a moderate cost of borrowing for the Government. However, both indicators are slowly increasing in the medium-term.

Risk management is one of the significant prerequisites of efficient public debt management. The objective of risk management is to avoid unpredicted losses and provide continuity of operations.

Among market risks associated to the existing debt portfolio, exchange rate risk is the most important. The exchange rate risk is mainly measured by the following two indicators: a) Share of debt in foreign currency in the total debt, b) Share of short-term current debt in foreign currency compared to CBA’s international reserves (Current debt is defined as the sum of repayments and interest payments).

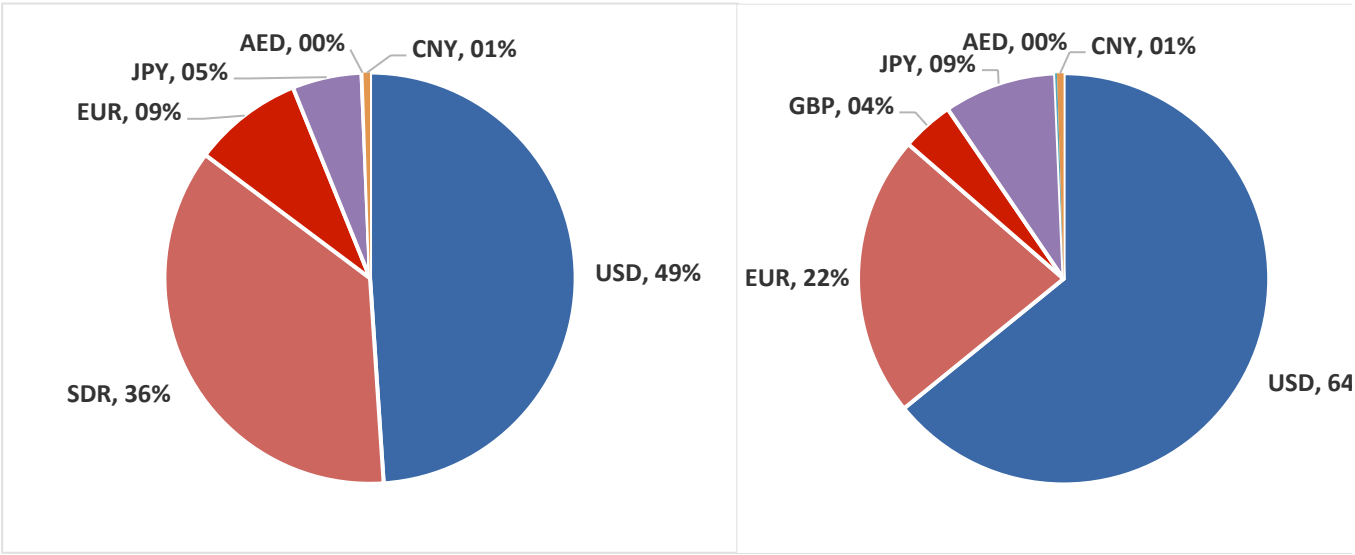
Current Government debt portfolio is exposed to a high exchange rate risk due to the still high proportion (80.7% against 85.6% of the previous year) of debt borrowed in foreign currency as of December 31, 2016.

Chart 1: The ratio of Government debt in AMD and foreign currency in 2015-2016 (%)



The composition of Government debt portfolio borrowed in foreign currency is presented below:

Chart 2: Government foreign currency debt portfolio composition at the end of 2016



The right chart shows the foreign currency composition of the debt portfolio after redistribution of the SDR.

The big share of foreign currency debt is a consequence of prevalence of bilateral and multilateral borrowings in the debt portfolio. These instruments are usually characterized by long maturity, concessional terms and fixed interest rates. In 2016 the share of short-term

current debt denominated in foreign currency, compared to the international reserves, has decreased and reached to 10.7% against 23.2% in 2015.

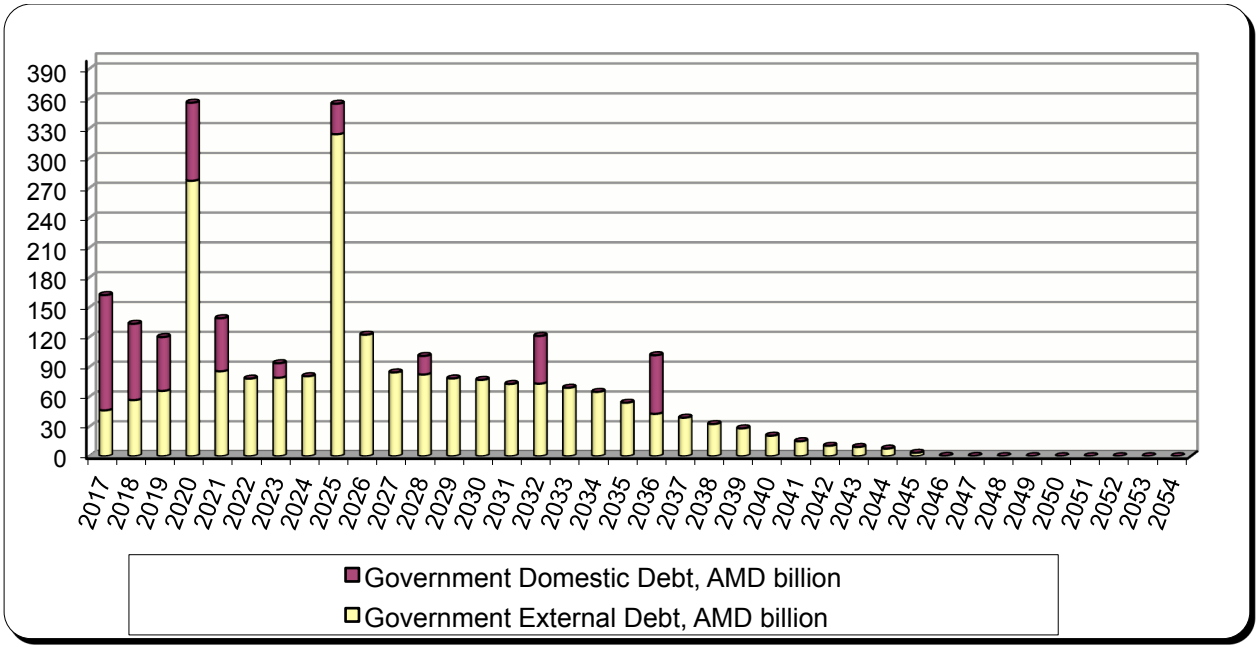
Regarding refinancing risk, the following three indicators have been mainly used to asses it: a) Size of the debt portfolio maturing within 1 year, b) Average time to maturity (ATM) of portfolio, c) Redemption profile of the Government debt portfolio.

The portfolio is exposed to a low refinancing risk, considering that only 6.2% of the debt is maturing within 1 year as of December 31, 2016. The share of external debt maturing within 1 year was 2.2%, and the share of domestic debt maturing within 1 year was 21.1%. This means that the refinancing risk is relatively high for domestic debt.

As of December 31, 2016 ”Average time to maturity” indicator made up 9.3 years, which is a result of the big share of external long term loans. Moreover, ”Average time to maturity” indicator of Government external debt totaled 10.1 years, and for the domestic debt it reached 6.0 years. This indicator confirms the moderate level of refinancing risk of Government debt portfolio.

The refinancing risk is presented more vividly through the redemption profile. The big redemption volumes in 2020 and 2025 are driven by the Eurobonds maturities that comprise 68.0% and 68.2% percent of the redemption amounts respectively.

Chart 3: Government debt maturity profile as of December 31, 2016



As of the end of 2016 repayments of Government external debt extend over to 2054, and repayments of domestic debt - over to 2036.

Finally, three indicators are considered to measure interest rate risk: a) share of fixed interest rate debt in the total debt, b) percentage of the debt portfolio with interest rates to be re-fixed in the next year, c) average time to re-fixing (ATR).

87.5% of the Government debt is with fixed interest rate, where 84.2% of external debt and the whole domestic debt are with fixed interest rate. Considering this situation, the rise of interest rate of the debt with floating interest rates could not lead to a significant growth in costs.

Nevertheless, 18.5% of the Government debt is subject to re-fixing during 2017 and contains moderate interest rate risk.

At the end of 2016, ”Average time to re-fixing” indicator was 7.8 years confirming the moderate refinancing risk of the debt portfolio. This indicator is smaller than the Average time to maturity of the portfolio because 12.5% of the debt is with floating interest rate and it is also subject to re-fixing during 2017.

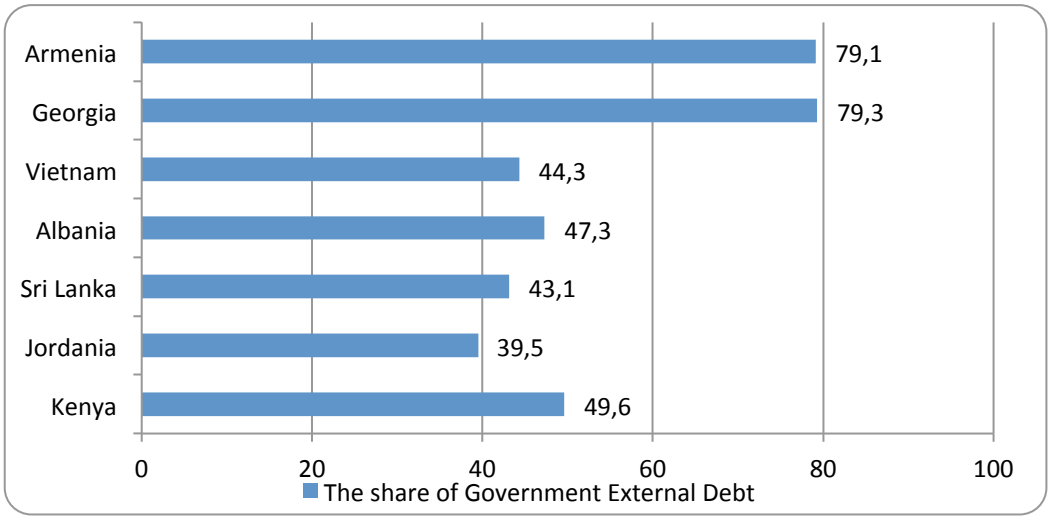
The result of the Government existing debt portfolio cost-at-risk analysis shows that the debt portfolio is mostly subject to exchange rate risk. From the refinancing perspective, there are some risks concerning to the domestic debt redemption profile, where 44.9% of the domestic debt redemptions is concentrated in the coming 3 years.

Selection of the debt management strategy

In order to reduce the Government debt management main risks (especially the exchange rate risk of the debt portfolio), the increase of the share of domestic debt in the total debt is considered as an essential objective.

The share of the Government external debt is quite large in contrast to the countries with comparable international ratings.

Chart 4: The comparison of volumes of the Government external debt of the peer’s countries at the end of 2016



The interest payments would increase in case of shifting part of external debt into domestic debt. Furthermore, the refinancing risk would slightly increase because the domestic debt instruments have much lower tenors than external loans. However, refinancing risk is currently moderate and should not be too difficult to manage.

Cost-at-risk analysis of the selected strategy

Based on the estimated macroeconomic assumptions, cost indicators of the Government debt will be higher at the end of the forecasted period.

Table 5: The projections of the cost indicators of Government Debt portfolio

	2017 budget program	2018 forecast	2019 forecast	2020 forecast
The weighted average interest rate of Government debt portfolio (%)	4.57	4.88	4.64	5.19
Interest payments / State budget revenues (%)	9.9	10.1	9.8	10.7
Interest payments / State budget expenditures (%)	8.8	9.1	8.9	9.8
Interest payments / GDP (%)	2.2	2.4	2.3	2.5

During the projected period the GDP will grow faster than the outstanding debt that would decrease Government Debt/GDP ratio, which forecasted 51.0% at the end of 2020. The average interest rate of the Government debt will be 5.19% at the end of the projected period. In 2020 the interest payments to GDP ratio will be 2.5% showing a slight increase compared to the beginning of the projected period. The reason for such limited increase of

costs is the dominance of multilateral debt in the existing debt portfolio during the projected period.

For risk management, priority is given to the management of refinancing, interest rate, exchange rate and operational risks.

Exchange rate risk

The share of domestic debt in total debt tends to benchmark level in the medium term and will reach to 21.2% at the end of mid-term.

Table 6: Share of domestic debt and foreign exchange (FX) debt in total Government debt

	2018 forecast	2019 forecast	2020 forecast
Domestic debt / Total debt (%)	20.7	20.7	21.2
Government FX debt / Total debt (%)	80.6	80.4	79.9

In the medium term, the share of FX debt decreases up to 79.9%.

The exchange rate risk of the Government debt portfolio will remain as a main risk factor in the coming years.

Table 7: 2017-2020 Government FX debt structure

(percent)

	2017 budget program	2018 forecast	2019 forecast	2020 forecast
USD	51.5	54.8	56.1	58.5
SDR	33.7	29.2	26.2	22.7
EUR	8.7	11.1	13.3	15.0
JPY	5.4	4.4	3.9	3.4
AED	0.1	0.1	0.1	0.1
CNY	0.5	0.4	0.4	0.4

If SDR exchange rate, which represents a basket of five currencies, is distributed according to each currency share in the basket: USD – 41.73%, EUR – 30.93%, GBP – 8.09%, JPY – 8.33% and CNY – 10.92%, the Government FX debt structure will be the following:

Table 8: 2017-2020 Government FX debt structure after redistribution of the SDR

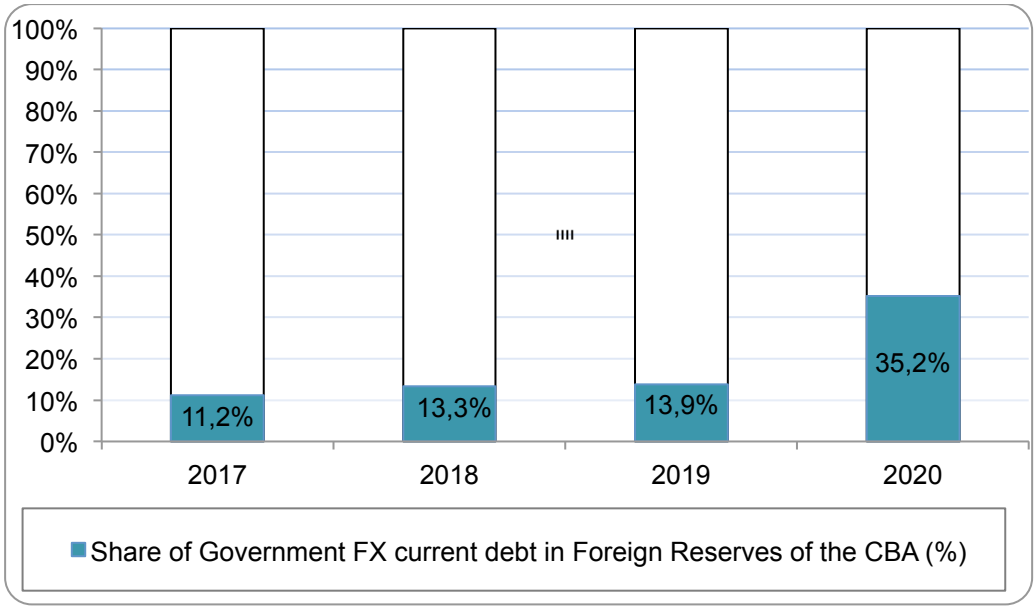
(percent)

	2017 budget program	2018 forecast	2019 forecast	2020 forecast
USD	65.6	66.9	67.0	67.9

EUR	19.1	20.2	21.4	22.0
GBP	2.7	2.4	2.1	1.8
JPY	8.2	6.8	6.1	5.3
AED	0.1	0.1	0.1	0.1
CNY	4.2	3.6	3.3	2.8

In order to efficiently manage and reduce exchange rate risk of the portfolio, it is possible that various approaches of hedging will be applied in the future (for example, using foreign exchange swaps).

Chart 5: Share of the Government FX current debt in foreign reserves of the Central Bank in 2017-2020



"The share of Government current FX debt within the CBA foreign assets" indicator will significantly increase in 2020 due to the redemption of USD 500.0 million Eurobonds, the share of which is 18.1 percentage points.

Refinancing risk

Refinancing risk is important, as it arises from Government debt service amounts to be paid in the near future and from possible adverse developments in the international and domestic capital markets. While preparing issuances of bonds, Government takes care of smoothing repayment schedule and mitigating refinancing risk. Buybacks are also widely used to mitigate refinancing risk, as well as some Treasury Bonds' allocations have been organizing on the maturity days of Benchmark Bonds.

Table 9: 2017-2020 Refinancing risk indicators of the Government debt

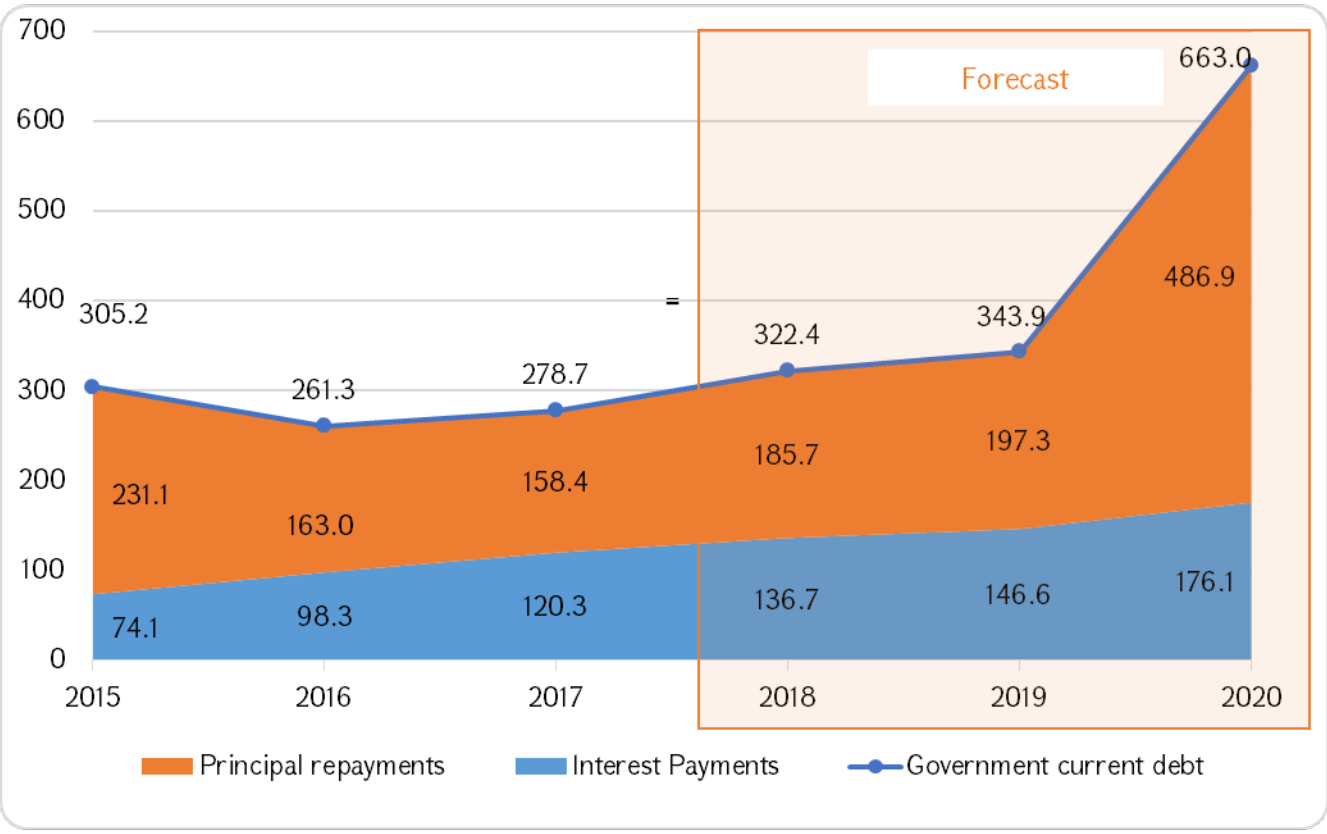
	2017 forecast	2018 forecast	2019 forecast	2020 forecast
Average time to maturity of Government debt (ATM) (year)	**9.1**	**8.6**	**8.0**	**8.3**
Average time to maturity of Government external debt (year)	9.5	8.8	8.1	8.4
Average time to maturity of Government domestic debt (year)	7.4	7.7	7.6	8.1
The share of Government debt amortizing within 1 year (%)	**5.2**	**5.4**	**13.4**	**6.9**
The share of Government external debt amortizing within 1 year (%)	2.6	3.3	11.7	4.6
The share of Government domestic debt amortizing within 1 year (%)	14.7	13.4	19.9	15.5

”Average time to maturity” indicator of Government debt will decrease to 8.3 years by the end of 2020. This is due to the Eurobonds maturing in 2020 and 2025, which represent an important part of the debt portfolio. As their redemption year approaches, the ATM decreases. Furthermore, Armenia has upgraded to the status of middle-income country according to the World Bank classification, following the recovery of the economy. Consequently, the international donor organizations and foreign countries started gradually offering stringent lending terms and reduced amounts of concessional funds. Despite limited access to concessional borrowing, the ATM indicator will not change significantly during the forecasted period and will remain within defined Benchmark range. From that perspective, refinancing risk is estimated to be moderate.

‘’The share of Government debt amortizing within 1 year in total debt’’ indicator will make up 6.9% at the end of 2020. “The share of Government external debt amortizing within 1 year in total external debt” indicator will comprise 4.6%, and “The share of Government domestic debt amortizing within 1 year in total domestic debt” will reach to 15.5%.

“Government current debt” indicator, which is the sum of the principal repayments and interest payments during a year, is presented below.

Chart 6: 2015-2020 Government Current debt (billion AMD)



"Government current debt" indicator increases within medium term more than doubling in 2020.

Table 10: Government current debt by instruments

(billion AMD)

	2017 budget program	2018 forecast	2019 forecast	2020 forecast
Government current debt by instruments, of which	**278.7**	**322.4**	**343.9**	**663.0**
External loans and credits	85.6	113.7	133.1	176.6
Interest	37.6	46.0	50.8	55.6
Amortization	48.0	67.7	82.3	121.0
Government bonds in local currency	161.9	176.9	179.0	193.3
Interest	51.5	58.9	64.0	69.3
Amortization	110.4	118.0	115.0	124.0
Government bonds in foreign currency	31.3	31.8	31.8	293.1
Interest	31.3	31.8	31.8	51.2
Amortization	-	-	-	241.9

Government controls refinancing risk by using debt and cash flow management tools.

Interest rate risk

More attention should be paid to the risks associated with the interest rate, because the share of the funds borrowed with market terms is increasing. From the strategic perspective, the objective of the interest rate risk management is to ensure such kind of Government debt structure, where the changes of the interest rates in the financial markets would have less impact on the level of forecasted interest payments. The interest rate risk of the Government debt is slightly worsening during the forecasted period but it remains under control.

The share of the fixed rate debt decreases up to 79.6% at the end of 2020. Although Government will issue more fixed rate domestic debt, the outstanding amount of Government securities will not be significant yet. On the other hand, the multilateral donors will provide more loans with floating interest rates driving a decrease of the share of fixed rate debt of Government debt portfolio.

Table 11: Weights of floating and fixed interest rate loans within the Government debt in 2017-2020 (%)

	2017 budget program	2018 forecast	2019 forecast	2020 forecast
Government Debt,	100.0	100.0	100.0	100.0
of which				
Fixed Interest Rate	84.3	83.6	81.3	79.6
Floating Interest Rate	15.7	16.4	18.7	20.4
Government External Debt	100.0	100.0	100.0	100.0
of which				
Fixed Interest Rate	80.0	79.3	76.4	74.1
Floating Interest Rate	20.0	20.7	23.6	25.9
Government Domestic Debt	100.0	100.0	100.0	100.0
of which				
Fixed Interest Rate	100.0	100.0	100.0	100.0
Floating Interest Rate	0.0	0.0	0.0	0.0

“Average time to re-fixing of Government debt” indicator is also diminishing comprising 6.4 years at the end of mid-term. “The share of Government debt re-fixing within 1 year” indicator is reaching to 26.7% in 2020 due to the increase of the share of floating interest rate debt.

Table 12: The Interest rate risk indicators of the Government debt in 2017-2020

	2017 forecast	2018 forecast	2019 forecast	2020 forecast
Average time to re-fixing of the Government debt (years)	7.3	6.8	6.2	6.4
Average Time to re-fixing of the Government external debt (years)	7.3	6.6	5.8	5.9
Average Time to re-fixing of the Government domestic debt (years)	7.4	7.7	7.6	8.1
The share of the Government debt re-fixing within 1 year (%)	20.8	21.5	31.8	26.7
The share of the Government external debt re-fixing within 1 year (%)	22.4	23.6	34.9	29.8
The share of the Government domestic debt re-fixing within 1 year (%)	14.7	13.4	19.9	15.5

Operational risk

Operational risk can result from the external factors, technologies or insufficient activity of the staff, organization and processes. Managing efficiently operational risk requires a sound framework including secure technological solutions and adequate document management. For instance, it is necessary to ensure a backup system for debt recording and accounting database in order to provide its safety and uninterrupted business processes, as well as timely and accurately implement debt obligations in case of major disruptions. In order to mitigate operational risks, Ministry of Finance is committed to further develop its procedures to strengthen information flows between public debt management units and improve regulations of the debt management main functions.

Sensitivity analysis

The cost-at-risk analysis performed heretofore was based on the macroeconomic and fiscal forecasted indicators and represents the baseline scenario of the Government debt management strategy. The deviations of the market variables from the baseline scenario after simulating different shocks and the impact of different shocks on cost and risk indicators are presented below.

Exchange rate

The Government debt portfolio is exposed to a significant exchange rate risk. Applying a 30% depreciation shock of AMD against USD in 2018, the Government debt to GDP ratio would reach to 61.6% at the end of 2020, which is 10.6 percentage points higher compared to the baseline scenario.

1% deviation of USD, EUR, JPY, GBP, AED exchange rates against the projected rates will lead to AMD 27.5 billion average annual changes in external debt during 2018-2020. The influence of 1% deviation of each of these currencies will have the following impact on the Government foreign exchange debt.

Table 13: The impact of 1% deviation of FX to AMD on the Government FX debt

	2018	2019	2020
Change of the Government FX debt (AMD billion)	25.5	27.3	29.6
of which			
USD	17.1	18.3	20.1
EUR	5.1	5.8	6.5
GBP	0.6	0.6	0.5
JPY	1.7	1.7	1.6
AED	0.03	0.02	0.02
CNY	0.9	0.9	0.8
Change of the Government FX debt (%)	0.8	0.8	0.8
Share of the Government FX debt change in GDP (%)	0.4	0.4	0.4

Interest rate

Considering shock on interest rates, such as increase by 250 basis points of the interest rates of external borrowings and increase by 500 basis points of the interest rates of domestic borrowings, the impact on the Government debt portfolio would remain moderate. In this case, “Government debt/GDP” ratio would increase only by 0.7 percentage points compared to the baseline scenario and would reach to 51.7% at the end of 2020. “Interest rate/GDP” ratio in such condition could increase by 0.4 percentage points.

It was considered also an extreme shock on the external debt interest rates provoking a parallel increase of 500 basis points and an extreme shock on the domestic debt interest rates provoking a parallel increase of 1000 basis points, which has a very low probability of

occurrence. Such kind of extreme shock would increase “Government Debt/GDP” ratio up to 52.7% at the end of 2020, pushing it up by 1.7 percentage points compared to the baseline scenario. In terms of Government debt service, this significant shock would increase “Interest Payments/GDP” ratio by 0.8 percentage points at the end of 2020.

The impacts of 1 percentage point increase of floating interest rate debt and 1 percentage point increase of the domestic interest rates are presented below.

A change of 1 percentage point of the floating interest rates (6 months US Libor and 6 months Euribor) would lead to AMD 5.2 billion average annual change in external debt service in 2018-2020. Particularly, the impact of an increase of 1 percentage point of 6 months US Libor and 6 months Euribor on the Government external debt service during the forecasted period would be the following:

Table 14: The impact of 1 percentage point change of floating interest rates on the Government external debt service

	2018	2019	2020
Change of the Government external debt interest payments (AMD billion)	4.2	5.2	6.3
of which			
6 months US Libor	3.9	4.7	5.5
6 months Euribor	0.3	0.5	0.8
Change of the Government external debt interest payments (%)	9.1	10.2	11.4
Change of the indicator of Government external debt interest payments/State budget own revenues (without grants), %	0.3	0.4	0.4

At the beginning of the forecasted period, an upward shift of the yield curve by 1 percentage point in the domestic market would lead to an increase of the domestic debt interest payments by an average AMD 2.1 billion annually in 2018-2020.

Table 15: The impact of 1 percentage point change of the domestic interest rates on the Government domestic debt interest payments at the beginning of medium term

	2018 forecast	2019 forecast	2020 forecast

Change of the Government domestic debt interest payments, AMD billion	0.7	2.0	3.6
Change of the Government domestic debt interest payments, %	1.1	3.1	5.1
Change of the indicator of Government domestic debt interest payments/State budget own revenues (without grants), %	0.1	0.1	0.2

The sensitivity analyses allow making a conclusion that a shock on the exchange rates would have much more impact on the Government debt portfolio than a shock on the interest rates. This is due to the big share of the foreign currency debt in the Government debt portfolio and the prevalence of fixed rate debt.

Conclusions

The results of the Government debt portfolio cost-at-risk analysis show that the debt portfolio is mostly exposed to exchange rate risk. Consequently, the Government takes the view that the debt management strategy should reinforce continuous development of the domestic debt market. In 2018-2020 it is planned to increase the share of the deficit financing through domestic net borrowing and reach it to 29.8% in 2020.

It is important to mention that the measures, carried out only in the Government debt management area, are not sufficient to substantially improve the Government domestic debt market. For the development of the domestic debt market and investor base it is also necessary to fully implement reforms in the other segments of the financial market (pension, insurance, etc).

In the medium-term the Government will continue implementing measures for smoothing debt maturity profile and reducing refinancing risk using liability management tools like constituting cash buffers, implementing buybacks and switches.

Appendix

2015-2016 Government debt actual indicators, 2017 state budget planned indicators and 2018-2020 forecasted indicators

Table 16: The main indicators of the Government debt during 2015-2020 (billion AMD)

	2015 actual	2016 actual	2017 budget program	2018 forecast	2019 forecast	2020 forecast
Government Debt	2,225.9	2,631.4	2,802	3,160	3,391	3,559
In % to previous year GDP	46.1	52.2	51.5	59.0	58.6	56.1
By residency						
Government domestic debt	368.4	550.0	601.8	653.2	703.5	753.8
Government external debt	1,857.5	2,081.4	2,200.5	2,507.1	2,687.2	2,805.6
By instruments						
External loans and credits	1,420.4	1,635.7	1,761.7	2,056.3	2,235.6	2,353.2
Domestic loans and credits	-	-	-	-	-	-
Government bonds in local currency	320.8	508.3	561.9	612.2	663.6	717.1
Government bonds in foreign currency	483.8	484.0	475.4	483.9	483.9	483.8
External Guarantees	-	-	-	3.6	3.6	3.6
Domestic Guarantees	1.0	3.4	3.3	4.4	4.1	1.7
Interest payments	74.1	98.3	120.3	136.7	146.6	176.1
Interest payments / State budget expenditures (%)	5.3	6.8	8.8	9.1	8.9	9.8
Interest payments / State budget own revenues (without grants) (%)	6.5	8.6	10.2	10.3	10.0	10.8
Interest payments / GDP (%)	1.5	1.9	2.2	2.4	2.3	2.5

Table 17: Government Bonds Indicators during 2015-2020

	2015 actual	2016 actual	2017 budget program	2018 forecast	2019 forecast	2020 forecast
Government bonds in local currency, AMD billion	320.8	508.3	561.9	612.2	663.6	717.1
In % to GDP	6.4	10.0	10.4	10.6	10.5	10.3
By ATM						
Up to 1 year	54.7	116.2	90.1	88.6	98.8	117.4
1-5 years	149.0	223.9	250.3	268.1	319.1	326.0
More than 5 years	117.1	168.3	221.5	255.5	245.7	273.7
Average interest rate (%)	14.0	13.2	13.7	12.9	12.4	11.9
ATM (years)	5.7	6.1	6.5	6.2	6.3	6.4
Government bonds in foreign currency, USD million	1,000.1	1,000.1	1,000.1	1,000.1	1,000.1	1,000.0
In % to GDP	9.6	9.5	8.8	8.4	7.6	6.9

Average interest rate (%)	6.9	6.9	6.9	6.9	6.9	7.8
ATM (years)	7.0	6.0	5.0	4.0	3.0	6.6

Table 18: Government Loans and Credits during 2015-2020 (USD million)

	2015 actual	2016 actual	2017 budget program	2018 forecast	2019 forecast	2020 forecast
Government Loans and Credits, USD million	2,936.2	3,380.0	3,706.1	4,250.1	4,620.6	4,863.6
In % to GDP	28.2	32.2	32.6	35.5	35.3	33.7
By residency						
External loans and credits	2,936.2	3,380.0	3,706.1	4,250.1	4,620.6	4,863.6
Domestic loans and credits	-	-	-	-	-	-
By type of Creditor						
Multilateral creditors	2,489.2	2,831.4	3,130.9	3,298.6	3,506.3	3,670.8
Bilateral creditors	423.9	526.1	552.6	930.3	1,094.8	1,174.9
Commercial banks	23.2	22.4	22.5	21.1	19.5	17.9
Average interest rate (%)	1.6	1.8	2.3	2.5	2.5	2.5
ATM (years)	11.6	11.2	10.6	9.8	9.1	8.6

2018-2020 Government external debt projections are based on the following assumptions:

- 1SDR=1.357USD, 1EUR=1.066USD, 1JPY=0.009USD, 1AED=0.272USD, 1CNY=0.145USD (source: CBA),
- USD 6 months LIBOR - 2.5%, 6 months EURIBOR - 0.5%.