Sustainability of external debt in Belarus: Analysis and Policy Recommendations

Gleb Shymanovich, Robert Kirchner

About the IPM Research Center

The IPM Research Center was established in 1999 within the mutual project of the Institute for Privatization and Management (Minsk, Belarus) and CASE - Center for Social and Economic Research Foundation (Warsaw, Poland). It is a member of the CASE research network, William Davidson Institute NGO Alliance, and Economic Policy Institutes Network (project of the UNDP's Regional Bureau for Europe and the CIS). The IPM Research Center actively cooperates with the German Economic Team in Belarus (GET Belarus). Within this cooperation the IPM Research Center provides independent policy advice on economic issues to the different official agencies, namely to the Council of Ministers, National Bank, Ministry of Economy, Ministry of Finance and other organizations involved in the process of formation and implementation of economic policy.

The Mission of the IPM Research Center is to enhance national competitiveness through elaboration of the research-based economic policy recommendation and the promotion of professional dialogue on the urgent issues related to economic performance.

IPM Research Center
50B Zakharova Street, 220088, Minsk, Belarus
Tel: +375 (17) 2 100 105
Fax: +375 (17) 2 100 105
E-Mail: research@research.by
http://www.research.by

About the German Economic Team Belarus (GET Belarus)

The main purpose of GET Belarus is to conduct a dialogue on economic policy issues with the government, civil society, and international organizations. Experts of German Economic Team have experience in policy advice in several transition economies, including Ukraine, Russia, and Moldova. In Belarus the IPM Research Center and the German Economic Team provide information and analytical support to the Council of Ministers, the National Bank, the Ministry of Foreign Affairs, the Ministry of Economy and other institutions involved in the process of formation and implementation of economic policy.

German Economic Team Belarus
c/o Berlin Economics
Schillerstr. 59
D-10627 Berlin
Tel: +49 30 / 20 61 34 64 0
Fax: +49 30 / 20 61 34 64 9
E-Mail: info@get-belarus.de
http://www.get-belarus.de

Sustainability of external debt in Belarus:
Analysis and Policy Recommendations

Executive summary

Faced with persistent external imbalances over the last couple of years, Belarus responded to these developments with a rapid build-up of its external debt stock. It grew in USD terms by more than 4 times over 2007-2010, from USD 6.8 bn in the beginning of 2007 to 28.4 bn in the end of 2010. The economic and currency crisis during 2011 aggravated this situation further, as new borrowings were required while two significant devaluations occurred. These factors lead to the situation that the expected external debt to GDP ratio at the end of 2011 will be at 75.5%, after only 18.4% in early 2007. In terms of its structure, the share of the general government (often from official lenders) within the total external debt stock increased rapidly, amounting now to more than 40% of the debt stock, after only 8.9% in the beginning of 2007. While banks kept their external exposure relatively stable over this period, corporates (mainly state-owned companies (SOE), whose debt is not formally guaranteed by the state) decreased their share in debt stock accordingly.

The current level of external debt and the speed of change over the recent past raise immediately the question of debt sustainability in Belarus, i.e. the ability of the country to meet its current and future debt service obligations in full. In this paper, we discuss a number of possible approaches and indicators to assess debt sustainability, both by domestic and international standards, and apply them to the concrete context of Belarus. There are a number of findings which deserve close attention: First, we do not find any econometric evidence that debt attraction influences economic performance in a positive manner. On the contrary, further debt increases may suppress future economic development and is thus harmful. Second, while most indicators signal that debt sustainability is turning into an important issue, the short-term risks are still limited.

In terms of policy recommendations, we suggest a number of actions. First, a fundamental re-think of macro policies is needed. Tight policies should keep external deficits manageable, while the financing should consist of mainly FDI rather than debt-creating inflows. Second, the authorities should follow the example of other countries and publish also debt statistics on remaining maturity on a regular basis. This helps to monitor external exposure and increases transparency. Third, more analysis of the considerable debt attracted by SOEs is needed, as this might in some cases be a contingent liability of the state.

Authors

Gleb Shymanovich	shymanovich@research.by	+375 17 / 210 01 05
Robert Kirchner	kirchner@berlin-economics.com	+49 30 / 2061 34 64 2

Contents

1. Introduction

Belarus has been accumulating external debt at a tremendous pace over the last few years. It grew more than in 4 times over 2007 – 2010 (from USD 6.8 bn in the beginning of 2007 to 28.4 bn in the end of 2010). If measured in relation to GDP, growth rates are similarly impressive: Belarus gross external debt increased from 18.5% to 52.0% of GDP over this period. Debt accumulation was an economic policy response to structural external imbalances, boiling down to the current account deficit. External borrowings covered this deficit and allowed keeping a fixed exchange rate. Other non-debt instruments, including FDI attraction were hardly pursued, and this may lead to sustainability problems in the long term, as the explosion of external debt occurred in a very short period of time. Moreover, a further growth of the gross external debt to GDP ratio is inevitable due to the currency crisis of 2011. The existing external imbalances, rooted in the structure of the economy, require new borrowings. Otherwise, a depreciation of the Belarusian ruble (BYR) will still lead to increased costs of external debt servicing, which is nominated largely in USD. In these circumstances, external debt management issues gain crucial importance. The key problem is to define the critical level of gross external debt, when further debt accumulation may threaten financial sustainability of the economy and suppress economic growth.

This is not an easy task as the critical level of external debt is hard to estimate even post factum after a debt crisis has materialised. It is obvious that this threshold differs from country to country and from time to time, as it depends on the structure of debt, macroeconomic situation within the country, global economic environment and risk perception by creditors. The optimal solution is to work out a set of early warning indicators that will signal a growing risk of debt unsustainability. Such indicators have been developed by international financial organisations, rating agencies, academic researchers and private sector agents like banks on the basis of empirical research on previous debt crises. Many countries, including Belarus, have also their own indicators that take into account their economic policy and macroeconomic sustainability criteria. This paper aims at studying Belarus' external debt sustainability based on existed local and international indicators and draws conclusions over the possibilities of further debt accumulation. Besides, effectiveness of local debt sustainability indicators will be tested.

The paper is structured as follows. The second chapter discusses Belarus external debt dynamics and structure in the last years. The third chapter explains the theoretical concept of debt sustainability and describes main approaches of its analysis. The relevant set of debt sustainability indicators for Belarus and an analysis of the current gross external debt stance in the country is provided in chapter 4. The fifth chapter concludes and provides policy recommendations.

2. External Debt Dynamics in Belarus 2007–2010

Statistics on gross external debt in Belarus are collected by the National Bank of Belarus (NBB) based on the definition provided by IMF[1]:

> "Gross external debt, at any given time, is the outstanding amount of those current, and not contingent liabilities owed to non-residents by residents of an economy that require payment(s) either of principal and/or interest by the debtor at some point(s) in the future."

There are also alternative definitions of external debt. One of them stresses that external debt comprises liabilities issued abroad (Panizza, et al. (2010)). This approach is closely related to the first one, and is designed to solve the problem of tracing the residence of the creditor[2]. Another approach is to estimate external debt based on the currency in which liabilities are nominated. It actually substitutes "external debt" notion with "foreign currency debt" one. This approach is rooted from the "original sin" problem: Many emerging market economies are not able to borrow in local currencies. Hence, even domestic liabilities issued in USD, EUR, Swiss Franks are a part of the problem, as their servicing implies necessity for additional inflow of foreign currency in the country to sustain the balance of payments.

The last approach is to some extent relevant for Belarus. The share of loans provided by banks in foreign currency was 21.7% of all loans provided to the economy at the beginning of 2011. By October 2011 it grew to 29.8% due to the devaluation of BYR. Moreover, the share of foreign currency deposits in banking system is much higher, equating to 61.9% in October 2011, which is an indicator of the financial dollarisation level. In financial markets, the share of bonds, issued in USD, EUR or RUB is also high, reaching 39% on November, 1. Domestic public debt, on the contrary, is nominated in BYR. Nevertheless, a big share of local debt nominated in foreign currency is a separate issue of dollarisation. It is interrelated with external debt sustainability issue, but can not be viewed as its key element, and substituting between external and foreign currency debt is not equivalent for the purpose of sustainability analysis.

2.1   The level of external debt

Belarus external debt has experienced a rapid surge since 2007. Earlier it was fluctuating below 25% of GDP (with the exception of 2002, when it amounted to 26.7% of GDP). Moreover, there was a declining trend in gross external debt measured in relation to GDP after 2003. It was a result of rapid economic growth fueled by low (subsidised) prices on imported energy goods and favorable market conditions for Belarusian goods in Russia. The situation changed radically when

---

[1] See http://www.nbrb.by/engl/statistics/ExternalDebt/.

[2] For example, it may be the case that the final owner of Eurobonds (issued by the government abroad) is a domestic bank that simply had no possibility to acquire these liabilities on the domestic market. A similar problem arises when local debt instruments are purchased by non-residents (e.g. in Russia, Ukraine).

Russia increased gas prices for Belarus by more than 2 times (up to USD 100 per 1,000 m^3 from 46.68 a year earlier) in early 2007. This resulted in a significant current account deficit (6.2% of GDP), which was financed by foreign direct investments and borrowings. As a consequence, gross external debt grew from 18.4% up to 27.6% of GDP within 2007. In nominal terms this growth was even more impressive: from USD 6.8 bn to 12.5 bn.

In the following year 2008 gross external debt declined slightly to 24.9% of GDP on the back of high economic growth rates, which were possible due to favorable external conditions in the first half of the year (mainly due to high oil prices). Meanwhile, in absolute terms there was an increase in gross external debt by USD 2.7 bn. This debt was accumulated by banks and the corporate sector in the first half of the year and state bodies in the second part, as the private sector faced limits on new foreign borrowing due to global financial crisis.

Dynamics of gross external debt were less optimistic in 2009. It grew up to 44.8% of GDP (i.e. by 19.9 percentage points) as debt accumulation was fueled by general government and corporate sector on the one hand and real depreciation of BYR by 13.3% on the other. Most of the debt was attracted in the form of an IMF loan within the Stand-by agreement (USD 4.8 bn) and new SDR allocations in August 2009.The corporate sector contributed to the increase of gross external debt via trade loans that increase by USD 1.6 bn.

The growing trend extended into 2010 as well, and most of this growth came from the public sector. Belarus received the last tranche of the IMF loan in the first quarter, issued Eurobonds in the third quarter and foreign bonds in the Russian market in the fourth. The gross external debt increased by USD 6.5 bn to 28.4 bn, and in comparison to GDP it exceeded 50% (52% of GDP by the end of 2010).

Debt dynamics remained largely the same in the first part of 2011. However, the source of this growth was a bit broader. It was the corporate sector (attracting trade loans), banks with foreign ownership (receiving financial sources from the parents), and general government (that issued Eurobonds and received the first tranche of USD 800 m of the EurAsEC loan). By the end of the first half of 2011, gross external debt was equal to USD 33.1 bn or 56.3% of GDP, as Figure 1 shows. However, the last figure will inevitably grow further. It does not capture the devaluation effect due to the currency crisis that developed in Belarus over 2011. Statistics for gross external debt in % of GDP by the end of the first half of 2011 is calculated based on GDP as a sum for the last 12 months ("trailing GDP"). So it takes into account the (official) devaluation of BYR only while calculating Belarus' GDP in May and June. Furthermore, there was another official devaluation of October-November, and in the meantime there was an unofficial exchange rate, which was much higher than the official one. This makes it a challenge to estimate the actual level of gross external debt in relation to GDP. According to the forecast of IPM Research center, it will exceed 100% of GDP at the end of 2011, if calculated based on the expected exchange rate at the

end of the year, or 75.5% based on the average exchange rate of the year[3] (including the temporary unofficial market). Anyway, in both variants it is a very high figure that stresses the utmost urgency in considering external debt management issues.

Figure 1. Development of gross external debt, eop
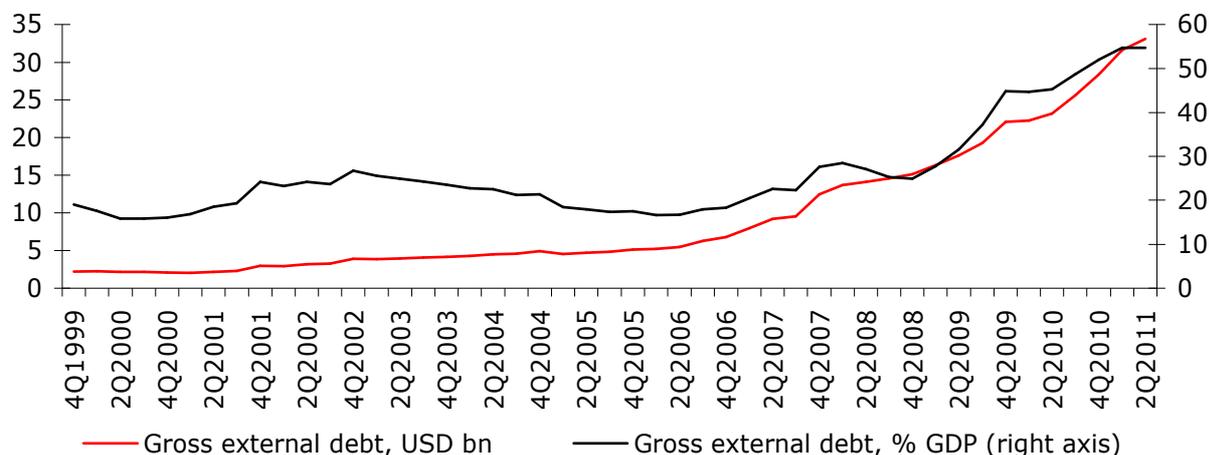
Source: National Bank of Belarus.

## 2.2   The sectoral structure of external debt

The structure of Belarus gross external debt has changed significantly since 2007, as Figure 2 shows. The main tendency was the growth of the general government share, as this sector was behind most of the debt increases in the last years. Belarus government attracted two intergovernmental Russian loans of USD 1.5 bn, loan from Venezuela (USD 700 m), IMF and EurAsEC loans, issued Eurobonds twice and placed once bonds on Russian market, leaving aside some small bilateral loans from the World Bank, Azerbaijan and China. As a result, general government and monetary authorities debt stands at 40.5% of Belarus gross external debt. For comparison, it constituted only 8.9% of debt in the beginning of 2007. Most of the debt at that time was accumulated by other sectors, i.e. the corporate sector, where the share was 58.6%. By the middle of 2011 it has fallen down to 35.8%. However, the nature of other sectors debt has remained the same. It is mainly made up by trade loans, which formed 68.7% of this sector's debt in middle 2011 (58.0% in the beginning of 2007). The third sector, which is crucial for Belarus gross external debt dynamics is the banking sector. The volume of banking sector external debt grew rapidly in 2006, as it managed to enter global capital markets at that time. It accounted for 27.6% of Belarus gross external debt in 2007, and this share was rather stable afterwards (21.1% nowadays). Banks played an important role at the end of 2010 and beginning of 2011, as they were able to attract financial sources (largely from Russia), which they swapped

---

[3] The Sberbank loan to Belaruskali was not included into 2011 debt, as it was expected to be received in 2012.

subsequently with the National Bank of Belarus to support the latter's official reserve holdings and to postpone the devaluation of BYR. The role of intercompany lending has been marginal due to absence of global businesses in Belarus.

The considerable increase of the general government share in gross external debt at the expense of the remaining sectors caused also changes in debt structure by maturity. The share of short term debt by original maturity[4] fell from 69.4% in the beginning of 2007 down to 43.1% in the middle of 2011. Most of this debt is accumulated in the form of trade loans (62.5% of the short-term debt), which are usually rolled over, as the average term of payment is around 3 months. This also explains high external debt service, which regularly exceeds 10% of GDP. That is comparable to such countries as Latvia, Estonia, Hungary and Slovenia that have gross external debt far above 100% of GDP[5].

Figure 2. Sectoral distribution of external debt, %
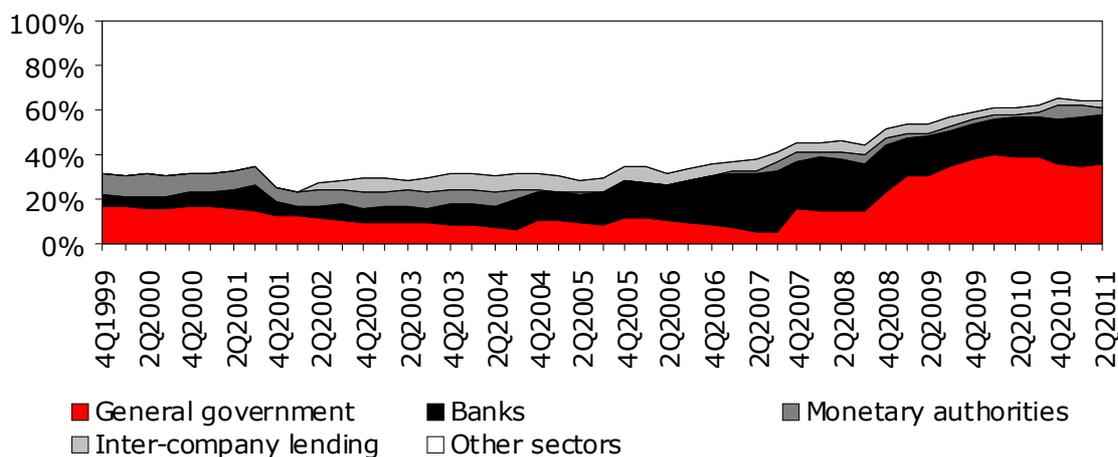
Source: National Bank of Belarus.

3. Assessing external debt sustainability: Theoretical and Practical Concepts

3.1   Theoretical background

External debt has a dual influence on economic development. It can stimulate economic growth via the attraction of additional investments but, on the contrary, also curtail growth by creating disincentives for investments and adequate economic policy if its volume is unmanageable. This makes debt sustainability analysis, based on the estimating turning point when debt accumulation starts hampering growth, a crucial element of economic policy analysis. This approach is primarily of interest for the debtor. From the creditor's point of view, debt sustainability is measured by the

---

[4] The term of the borrowing is not set or is less than 12 months.
[5] See EBRD macroeconomic indicators database http://www.ebrd.com/downloads/research/economics/macrodata/sei.xls.

ability and the willingness of the country to service its liabilities, which implies that the costs of servicing the debt are lower than the costs of bankruptcy.

There are two approaches for debt sustainability analysis (Arnone (2005)):

− Financial sustainability approach (analysis of financial possibilities for further debt increase),

− Economic sustainability approach (complex analysis of economic variables, related to the external debt behavior).

3.2 Financial sustainability analysis

Financial sustainability analysis is based on two theoretical models: balance approach and net present value constraint approach (Arnone (2005)). Balance approach is based on the Harrod-Domar growth model and it stresses that the economy is able to service its debt and keep it at a manageable level as long as the growth rate is higher than the interest rate. Net present value constraint approach implies that the country is solvent until its future revenues, discounted to the current value, are higher than the existing stock of debt (Eaton (1992)). From a practical side it means that there is some definite level of debt in relation to revenues, after which it becomes unsustainable. However, it is difficult to predict the level of future revenues, and furthermore, the choice of what should be considered as revenue is not entirely clear. Due to these challenges, the model has been transformed into one where the present value of debt is compared with current revenue. Indicators for revenues can be GDP, exports or budget revenues, which is an approach of the IMF in assessing sustainability of low income countries.

In general financial sustainability analysis is based on estimating indicators and comparing them with adopted thresholds. These indicators can be divided into 2 groups:

− measuring liquidity constraints,

− measuring solvency constraints.

Solvency constraints appear when a country happens to be highly indebted and is unable to fulfill its obligations. A liquidity crisis can be a part of a solvency issue, but it can appear alone, when a country has temporal problems with debt servicing due to a self-fulfilling run of creditors from short-term obligations and the lack of possibilities to roll them over (Manasse, et al. (2003)). In such circumstances, even a country with sound macroeconomic indicators and strong economic policies that do not cast doubts over its long-term solvency may find itself in trap, which is a result of the short-term nature of its debt or a big amount of debt coming due within short period of time.

The most popular liquidity constraint indicators are:

− gross external debt servicing to GDP ratio,

- public external debt servicing to primary general government revenues ratio,

- international reserves to short-term gross external debt ratio,

- short-term external debt to exports or GDP ratio.

The choice of indicator depends on the nature of the external debt. When fiscal deficit contributes largely to debt accumulation, it is advisable to stick to the indicators that compare debt with the public sector revenues. In case external debt is a result of distortions in the current account, the ratios which focus on international reserves and exports are more relevant. GDP ratios are used when it is difficult to define the sector that contributes most to debt accumulation or when the reasons for this are rooted in macroeconomic policy. Debt servicing indicators are crucial when country suffers from interest rates growth.

The wide-spread solvency constraint indicators are:

- gross external debt to GDP ratio,

- public external debt to GDP ratio.

The choice of GDP as a denominator is explained by the design of the solvency constraint indicators aimed at measuring long-term sustainability of external debt, criteria of which is a GDP-debt nexus. The debt, in addition, is supposed to be estimated on a net present value basis[6], which has its own drawbacks as it is rather difficult to get data on interest rates for all elements of gross external debt and assess correctly future market interest rates.

The thresholds for the indicators mentioned above are set either by local authorities or international financial organisations. For instance, the IMF has the following set of thresholds for low income countries, depending on the soundness of economic policy in the country:

Table 1. Debt Burden Thresholds under the Debt Sustainability Framework (DSF)

	NPV of DEBT in relation to			Debt service in relation to	
	Exports	GDP	Budget revenue	Exports	Budget revenue
Weak economic policy	100	30	200	15	25
Medium economic policy	150	40	250	20	30
Strong economic policy	200	50	300	25	35

Note: Analysis applies to public external debt.
Source: IMF-WB (2010). Staff Guidance Note on the Application of the Joint Bank-Fund Debt Sustainability Framework for Low-Income Countries.

---

[6]The nominal amount outstanding minus the sum of all future debt-service obligations (interest and principal) on existing debt discounted at an interest rate different from the contracted rate.

For the middle income countries, the IMF is more prone to apply economic sustainability analysis. Nevertheless, the threshold for these countries is also set at net present value of debt at 40% of GDP. This threshold means that the country with external debt higher than 40% of GDP has a 20% probability of falling into the debt crisis. The level below 40% is associated with 2-5% probability of the crisis (IMF (2003).

Banks and ratings agencies have their own thresholds. For example, Standard and Poor's analyses net external debt instead of gross one and measures it in relation to current account revenues. The risk of a crisis becomes obvious when this ratio exceeds 150%. Besides, this agency pays attention to the public debt ratios as well. The risk of a crisis is considered to be high if either level of public debt exceeds 80% of GDP, or its servicing costs exceed 10% of the general government revenues[7].

There is also extensive empirical literature devoted to the estimation of the threshold of debt sustainability. The most prominent research is one by Reinhart and Rogoff (2010) that argue this threshold in the crisis aftermath is 60% of GDP for emerging market economies.

3.3   Economic sustainability analysis

Economic sustainability analysis differs from the financial one in the sense that it takes into account endogenity of the variables, related to the external debt and economic growth. It implies estimation of interdependences between budget deficits, inflation, exchange rate, current account deficit, external and domestic debt, investments and so on. Furthermore, sustainability is measured not solely by debt service possibility, but also by possibility to generate income growth of the population (Arnone (2005)). The main drawback of such an analysis is its complexity, as it demands the construction of structural macroeconomic models. However, it provides a tool for running different scenarios and making stress-tests, which show the risks to which external debt sustainability is mostly exposed to.

The economic sustainability approach is applied by the IMF within the country reports prepared under Article IV (IMF (2002)). IMF jointly with the WB distinguishes between low income countries and countries with access to financial markets while running the debt sustainability analysis. However, the methodology behind them is pretty much the same. It is based on the unification of the external and fiscal sustainability analysis and medium-term forecast. Fiscal and external sectors analysis casts light over public and external debt sustainability, which are implicitly integrated. Both of them are based on the economic forecast done within the country mission, and do not demand full consistency within other macroeconomic indicators. External sector is forecast on the basis of the estimated growth rates, nominal exchange rates, inflation, and possible debt

---

[7] See http://img.en25.com/Web/StandardandPoors/2011-06-30_sovereigncriteria_sp_8513.pdf.

financing costs in such a way that current account fits external debt accumulation. In practice it implies rather sophisticated estimates of current account (based on output gap estimates) and checks whether the exchange rate is not overvalued, which can undermine external debt sustainability in case the exchange rate dynamic returns to equilibrium. Fiscal sector sustainability analysis emerges from the analysis of the efforts needed to sustain a stable level of public debt to GDP. The IMF also tries to take into account contingent liabilities, but this process differs across countries and is based largely on the experts' judgment. A unified algorithm of external debt sustainability analysis is a key advantage of the IMF methodology. However, it does not eliminate the necessity for judgments, which tend to be too optimistic (IMF (2003)).

In addition to the baseline scenario, some other standardised scenarios are forecast by the IMF, based on average historical values, consensus forecasts or absence of reforms, and special scenario of GDP fall by one standard deviation. Besides, there are debt bounds sensitivity tests that model a two standard deviation shock during two periods for the nominal interest rate, real GDP growth rate, change in US dollar GDP deflator and non-interest current account, and a combination of the last four shocks at one standard deviation level and a one-off 30 percent nominal depreciation. The choice of the shocks is rooted from the debt dynamics equation, as its volume depends on GDP growth, the exchange rate, deflator, interest rate, and trade balance, and they allow revealing the elements of external debt sustainability most exposed to risk.

Except international financial organisations, some investment banks and credit rating agencies also do economic debt sustainability research. However, they usually do not have a thoroughly unified methodology for running this analysis. It is based on the assumptions done by their staff and the change in the staff may significantly alter the results of the sustainability analysis (IMF (2003)). Most of banks do quantitative research, while ratings agencies are more prone to do qualitative research, focusing on liquidity constraints rather than long-term sustainability. The latter is viewed as an ability to sustain current level of debt and is rarely related to some thresholds. However, some banks apply sophisticated stochastic models to run debt sustainability analysis for key countries, and try to incorporate contingent liabilities, which is a demanding task. Moreover rating agencies do not fully disclose the methodology of the analysis, so its evolution is rather speculative.

4. External debt sustainability in Belarus

4.1 External debt indicators

Traditionally, Belarus has published a set of sustainability indicators related to public debt and public external debt in particular. They have been set annually within the budget approval procedure in the form of maximum volumes in nominal USD terms. For 2011, the limits have been

USD 13 bn for public external debt and USD 5 bn for publicly guaranteed external debt. Besides, there is a National Security Concept that regulates limits for external indebtedness in relation to key macroeconomic indicators. Its provisions imply the level of indebtedness is safe, as long as:

− gross external debt is lower than 55% of GDP,

− gross external debt is lower than 100% of exports,

− the share of short-term gross external debt is lower than 50% of total debt,

− public external debt is lower than 25% of GDP,

− public external debt servicing is lower than 10% of foreign currency revenues.

These thresholds were complemented by a set of new indicators, introduced in 2011 within the External Debt Management Concept, which came in force in May 2011. The Concept stresses the necessity to analyse the following additional indicators:

1. Gross external debt indicators:

− gross external debt per capita,

− long-term external debt to GDP ratio,

− short-term external debt to GDP ratio,

− gross external debt to current account revenues ratio,

− gross external debt servicing to exports of goods and services ratio,

− gross external debt servicing to GDP ratio,

− international reserves to gross external debt ratio,

− international reserves to short-term debt ratio.

2. General government external debt indicators:

− public external debt servicing to central government budget revenues

3. Monetary authority and banking sector external debt indicators:

− banking sector open foreign exchange position,

− the share of non-resident sources in banking sector liabilities.

4. Other sectors debt:

− book value of debt over equity (own capital) of enterprise (leverage),

− the ratio of short-term debt in foreign currency to total external debt of enterprises in foreign currency,

−   assets profitability before taxes and interest payments,

−   net foreign currency debt over equity (own capital of enterprise).

The indicators chosen by Belarusian officials correspond to ones recommended by IMF and World Bank. Their analysis should provide relevant information regarding Belarus external debt sustainability, and limits set are in line with international standards for emerging economies.

4.2   External debt sustainability assessment

The key indicators of external indebtedness are those related to gross external debt and public external debt. Public debt development is viewed as a main indicator of debt sustainability in developed economies, while gross external debt is paid more attention to in emerging market economies (Reinhart, Rogoff (2010)). Public debt alone does not capture all the risks even related to sovereign insolvency that exist in the country. First, it is not always obvious whether private debt is really private, when there is a big share of public ownership in the economy. Second, in case of crisis in emerging market economies the government is inclined to buy out private debt in order to sustain economic stability and investors' trust in the economy.

The key gross external debt indicator is its ratio to GDP. Belarus gross external debt has recently exceeded the threshold of 55% of GDP set by the national security concept. After the first half of 2011 it was equal to 56.3% of GDP. Ministry of Economy expects its increase up to 70% by the end of the year and a further slow growth in upcoming years. It corresponds to the IMF baseline scenario forecast which expects gross external debt close to 70% of GDP in 2011, and claims it will exceed 85% in 2016 (IMF (2011)). It is far beyond both the officially set threshold and the world-wide accepted critical level of 60% of GDP, proposed by Reinhart and Rogoff. So, there is a real risk of Belarus gross external debt unsustainability, but the scale of this risk should be verified by other indicators. For instance, gross external debt to exports ratio is still below the safety threshold. It was 88.8% as of first half of 2011 and is forecast to exceed the 100% level only in 2014 (IMF (2011)). In other words, Belarus opportunities to service gross external debt may be a bit better than the debt to GDP ratio alone signals, as it underestimates the share of exports in GDP and foreign exchange revenues accordingly.

Another national security gross external debt indicator – the share of short-term debt – is below the threshold of 50% of total debt and is expected to remain so. Nevertheless, current share of 43.2% is relatively high, but it is explained by the dominance of trade loans in the external debt structure. They can hamper external debt sustainability only in case of a sudden import stop, which actually took place once in the end of 2008 (Shymanovich (2010)). In other circumstances this debt is automatically rolled over. This fact also makes external debt servicing indicators less useful in an external debt sustainability analysis, as they are also overestimated due to trade loans rolled over.

More insight is given by indicators that compare short-term external debt and international reserves. Reserves cover less than 30% of short-term debt, which makes Belarus subject to liquidity constraints. It is result of traditionally low level of reserves and fixed exchange rate regime that frequently demanded foreign exchange interventions. As National Bank declared switching to a managed float exchange rate regime in November 2011, it is possible that reserves will stabilize and cover a greater share of short-term debt in the future. Econometric analysis also proves that there are some doubts over future external debt sustainability. Sustainability implies that debt is serviced without negative outcome to economic development, so it can be assessed via a debt-growth nexus analysis. Some research has been done recently on this topic and it has shown rather week interrelations between Belarus gross external debt and economic growth rates. Earlier papers argued there was some positive correlation between debt increase and economic growth (Shymanovich (2011a)). However the latest research revealed that this trend may have reversed (Shymanovich (2011b)).

There are two main channels through which debt influences economic performance: via capital formation and total factor productivity (Pattillo, et al. (2004)). We tested these channels empirically for Belarus (see Annex for the details). A total factor productivity was assesed via Cobb-Douglass production function with constant returns to scale[8] and output elasticity of labour ("α") equal to 0.35, which can be viewed as the classic approach[9]. The research was done by cointegration analysis, and the results revealed that there was no obvious cointegration between external debt and either total factor productivity or capital stock. So, currently external debt does not influence Belarus economic development in the long-run. The short-term influence is proved to be also negligible. Moreover, debt short-term dynamics is affected greatly by the timing of political decisions on attracting loans, so its analysis should not be of great value. These results may be interpreted in a way, that any positive effects of debt accumulation on economic growth that have been registered in earlier studies have now been exhausted, and further debt increase may suppress economic development.

Gross external debt indicators and econometric analysis largely signalize about existing risk of debt unsustainability. However, the scale of this risk can not be treated as troublesome yet. Still, some closer outlook on debt structure should be beneficial to analysis of the prospects of debt sustainability.

Regarding the sectoral breakdown of debt dynamics, especially public debt dynamics are very informative in exploring Belarus possible threat of external debt unsustainability. General government was a key contributor to the gross external debt increase within 2007–2011.

---

[8] In previous papers (Shymanovich (2011a), Shymanovich (2011b)), in contrast, production function coefficients were estimated through regressions and they were not restricted to constant returns to scale.

[9] IMF (2010) applied α equal to 0.45, but NBB specialists argued 0.32 is more relevant for Belarus (Demidenko, Kuznetsov (2011)).

Furthermore the structure of its debt may cast some doubts over its sustainability in the middle-term due to current economic crisis in Belarus, while banking sector and other sectors indebtedness is less vulnerable to external shocks:

−   External debt of banking sector was growing on the back of external borrowing by banks with foreign ownership (Russian in particular), which ran expansion policies during last years. Taking into account financial possibilities of their respective headquarters, indebtedness of Belarusian subsidiaries may not be viewed as extremely high by them, unless the economic crisis hits Russia.

−   Other sectors' debt is constituted largely by trade loans, which is actually an import of goods and services with postponed payment and zero interest rate. Among active borrowers on external market one should mention only refinery business, metallurgy, and chemical industry.

−   Monetary authorities' external debt is formed by swap with China that does not thread external debt sustainability either.

Public debt limits, set within the budget, are not exceeded, as public external debt was USD 11.4 bn at the end of August and publicly guaranteed external debt was just USD 0.6 bn. One of the reasons why the upper bound of public external debt has not been reached is that it is set in US dollars. Had it been set as a share of general government revenues, the situation would have been different. The threshold of USD 13 bn was equal to 75% of general government revenues according to the budget plan for 2011. Nowadays, taking into account the latest corrections to the budget plan, the threshold exceeds 100% of general government revenues[10]. So it is more adequate to look at national security indicators which are set for general government debt[11] in relative terms.

According to official data general government debt was 20.4% of GDP by the end of the first half of 2011. If we weight that amount of debt on expected GDP by the end of 2011, it will give us about 26% of GDP. So possibilities for further public debt accumulation are limited, as it will be associated with a growing risk of a sovereign debt crisis. In the short-run there are no possibilities for crisis to occur, as general government debt servicing is just 0.4% of GDP (data on the first half of 2011). However, in the long-run situation differs greatly. Expected payments on public debt are USD 1.8 bn in 2012, and exceed USD 3 bn in 2013–2014. These are significant numbers (around 3.5% of GDP for 2012), taking into account the low level of international reserves. They may be only refinanced through either new borrowings or privatisation deals. Moreover, these

---

[10] General government revenues were initially planned at BYR 54.5 bn, which was equal to USD 17.2 bn as average exchange rate was expected to be 3170 BYR. In November expected volume of revenues was corrected to BYR 78.6 bn. With the average exchange rate of 6250 BYR (takes shadow market into account) it makes just USD 12.6 bn.

[11] General government debt does not fully correspond to public external debt, but it is very close to it.

expenditures put additional pressure on the current account, implying necessity for tight fiscal and monetary policy that will prevent rapid growth of import. As a positive sign one can mention that expenditures on debt servicing will be still much lower than 10% foreign currency revenues limit. According to IMF (2011) forecast public debt servicing will be 3.3% of total goods and services exports in 2012 and 5.2% in 2013–2014.

5. Conclusions and policy recommendations

Our analysis revealed that Belarus faces the potential problem of external debt sustainability. Level of gross external debt and forthcoming expenditures on public external debt servicing are key parameters that give rise to doubts over Belarus' possibilities to cope with external indebtedness without a negative impact on the domestic economy. There are several channels through which excessive debt can suppress economic growth. First, a debt overhang may take place. It arises when the level of external debt exceeds the country's possibilities to service it (Sachs (1989)). In such circumstances there are no incentives to invest as future income will be taxed away by foreign lenders. Second, large debt service payments create crowding out effects. In case of public debt it means that these costs are carried out at the expense of other public expenditures, for example on healthcare, education, and infrastructure, which undermines long-term economic growth. Third, huge external debt is associated with large uncertainty. It is unclear whether the debt will be serviced or rescheduled and on what conditions, how debt will affect the economy. Investors tend to postpone investment decisions due to this uncertainty even in case general macroeconomic stance is improving (Claessens, et al. (1996)).

Taking into account the current situation in the global economy and the unsolved sovereign debt crisis in Europe, the debt sustainability issue can become even more acute in Belarus. Risk tolerance is falling among investors and Belarus' debt can hardly be viewed as safe one. So, possibilities of future borrowings are largely limited to bilateral loans from other states, loans from international organizations (against conditionality) and possibly banking loans on collateral terms. **It means that Belarus has to reconsider its economic policy in order to avoid large need for external financing. It implies tight fiscal and monetary policy which will contribute to price and exchange rate stabilisation and a balanced current account.**

The system of Belarus external debt sustainability indicators is a comprehensive one and it corresponds generally to the IMF and World Bank standards. Still, there is some room for improvement. **First of all, short-term debt and related indices should be also estimated on a remaining maturity basis.** It will provide broader insights on liquidity constraints, as current debt servicing statistics can be misleading due to significant shifts in debt servicing from year to year. Short-term debt on original maturity does not capture these shifts either and has its

own drawbacks caused by dominant share of trade loans in it. The case of Ukraine, where the National Bank of Ukraine (NBU) started recently to publish such data on a regular basis can serve as an example. **Second, statistics on public sector debt can be complemented by data on external indebtedness of state-owned enterprises (SOEs).** In a crisis environment, this debt may easily end up at the public sector's balance sheet and finally hampering sovereign debt sustainability. Furthermore, such contingent liabilities cause additional problems. The availability of this instrument distorts incentives i) within public finance policy, as it allows hiding risks of some additional expenses, ii) within creditors, which assume possibility of bailing-out of the public enterprises or banks and provide loans without running scrutiny economic analysis of their efficiency (Cebotari (2008)). Therefore, more transparent information on the amount of SOEs external debt (with division on loans and trade credits) may be a good proxy for the exposure of contingent liability risk.

References

Arnone, M., Bandiera, L., Presbitero, A. (2005). External Debt Sustainability: Theory and Empirical Evidence, *Catholic University of Piacenza Economics Working Paper* 33.

Cebotari (2008) Contingent Liabilities: Issues and Practice, *IMF Working paper* 08/245.

Claessens, S., Kanbur, R., Wickham, P. (1996). Analytical Aspects of the Debt Problems of Heavily Indebted Poor Countries, *World Bank Policy Research Working Paper* 1618.

Demidenko, M., Kuznetsov, A. (2011). Estimation of potential real GDP level by means of production function, *Bankausky Vesnik (NBRB)*, 4(513), 42–46. (available only in Russian).

Eaton (1992). Sovereign debt. A primer. *World Bank Policy Research Working paper* 0855.

IMF (2002). Assessing Sustainability.

IMF (2003). Sustainability Assessments—Review of Application and Methodological Refinements.

IMF (2006). How to do a Debt Sustainability Analysis for Low-Income Countries. A Guide to LIC Debt Sustainability Analysis.

IMF (2010). Republic of Belarus: Selected Issues. *IMF Country Report* No. 10/16.

IMF (2011). The Republic of Belarus: First Post-Program Monitoring Discussions, *IMF Country Report* No. 11/277.

Manasse, P., Roubini, N., Schimmelpfennig, A. (2003). Predicting Sovereign Debt Crises, *IMF Working Paper WP/03/221* (Washington: International Monetary Fund)*.

Panizza, U., Sturzenegger, F., Zettlemeyer, J. (2010). International government debt, *UNCTAD Discussion paper* 199.

Pattillo, C., Poirson, H., Ricci, L. (2004). What Are the Channels Through Which External Debt Affects Growth? *IMF Working paper* 04/12.

Reinhart, C., Rogoff, K. (2010). Growth in a time of debt, *American Economic Review*, American Economic Association. Vol. 100(2), 573–78.

Sachs, J. (1989). The Debt Overhang of Developing Countries. In: Calvo, G., Findlay, R., Kouri, P., de Macedo, J. (Eds.) *Debt, Stabilization and Development*, Oxford: Basil Blackwell.

Shymanovich, G. (2010). Estimation of short-term external debt potential threats for Belarus, *Vestnik of Polotsk State University*, 10.

Shymanovich, G. (2011a). External debt influence on Belarus economic growth, *Journal of International Law and International relations*, 1, 87-93.

Shymanovich, G. (2011b). Factors of Belarus external debt growth, *Bankausky Vesnik (NBRB)*, 22(531), 48-54.

World Bank, IMF (2009). A Review of Some Aspects of the Low-Income Country Debt Sustainability Framework, World bank 49870.

External debt as the explanatory variable (DEB) was recalculated in real Belarusian rubles of 1995 by means of gross fixed capital formation deflator and average exchange rate. The final time series is non-stationary in levels and stationary in first differences. In other words, it is integrated of order one, or short, a $I(1)$ variable. Real GDP (GDP), stock of capital (K) and total factor productivity (TFT) in real terms are also $I(1)$ variables (see Table A1), and it is possible to assume the existence of cointegration between them. This was checked through an ARDL model and PcGive unit-root test for cointegration. The ARDL model was calculated for each dependent variable:

$$GDP_t = c_0 + \sum_{i=0}^{3} \alpha_i DEB_{t-i} + \sum_{i=1}^{3} \beta_i GDP_{t-i} + \varepsilon_t$$

$$TFP_t = c_0 + \sum_{i=0}^{3} \alpha_i DEB_{t-i} + \sum_{i=1}^{3} \beta_i TFP_{t-i} + \varepsilon_t$$

$$K_t = c_0 + \sum_{i=0}^{3} \alpha_i DEB_{t-i} + \sum_{i=1}^{3} \beta_i K_{t-i} + \varepsilon_t$$

Estimation was done in PcGive package which allowed automatic exclusion of non-significant variables and large residual correction. Final results are presented in the Table A2. They show that there is no cointegration between external debt and dependent variables.

Table A1. Unit-root tests

	Level			First difference		
	Specification	ADF statistics	5% level critical value	Specification	ADF statistics	5% level critical value
DEB	C, trend	-0.865	-3.494	C	-7.471	-2.916
GDP	C, trend	-2.661	-3.483	C	-7.149	-2.909
TFP	C, trend	-3.170	-3.483	C	-7.337	-2.909
K	C, trend, (1)	0.229	-3.484	C, trend	-3.986	-2.909

Source: Own estimation.

Table A2. ARDL-model and cointegration test

	Coefficient	Standard error	t-statistics	p-value	AR 1-4 test	ARCH 1-4 test	Normality test	Hetero test	Unit root test
GDP									
GDP_{t-1}	1.002	0.000	4842	0.000	1.168	0.570	0.834	4.426	--
$D1999q3$	-0.039	0.015	-2.67	0.010	[0.336]	[0.685]	[0.659]	[0.017]	
TFP									
TFP_{t-1}	0.996	0.007	132	0.000					
DEB_t	-0.047	0.022	-2.18	0.034	0.831	0.492	0.468	1.096	-0.548
DEB_{t-1}	0.049	0.022	2.25	0.029	[0.512]	[0.742]	[0.791]	[0.379]	
$D1999q3$	-0.040	0.014	-2.75	0.008					

K									
K_{t-1}	1.748	0.076	23.0	0.000					
K_{t-2}	-0.748	0.076	-9.84	0.000	1.927	1.190	3.247	1.081	0.700
DEB_{t-1}	-0.002	0.001	-2.16	0.036	[0.123]	[0.328]	[0.197]	[0.403]	
DEB_{t-2}	0.005	0.002	3.00	0.004					
DEB_{t-3}	-0.003	0.001	-2.30	0.026					
Trend	$5.509e^{-5}$	0.000	2.22	0.031					
D2010q2 -2010q1	0.005	0.001	9.04	0.000					

Note: P-value of tests are presented in brackets. Unit root test are not significant at 5% level.
Source: Own estimation.

Absence of cointegration limits econometric analysis to short-run equation estimation, which is done in first differences. Results are presented in Table A3. They were performed once again by means of PcGive package with automatic exclusion of non-significant variables and large residual correction.

Table A3. Short-term dynamics

	Coefficient	Standard error	t-statistics	p-value	AR 1-4 test	ARCH 1-4 test	Normality test	Hetero test
ΔGDP								
C_0	0.018	0.002	8.90	0.000	0.791	0.686	0.607	--
D1999q3	-0.039	0.015	-2.70	0.010	[0.537]	[0.605]	[0.738]	--
ΔTFP								
C_0	0.018	0.002	8.06	0.000	0.851	0.459	0.316	0.257
ΔDEB_t	-0.047	0.023	-2.06	0.045	[0.500]	[0.765]	[0.854]	[0.774]
D1999q3	-0.039	0.014	-2.74	0.008				
ΔK								
ΔK_{t-1}	0.820	0.065	12.5	0.000				
DEB_{t-1}	-0.003	0.001	-2.37	0.022	1. 738	1.025	3.902	1.856
DEB_{t-2}	0.003	0.001	2.23	0.031	[0.159]	[0.405]	[0.142]	[0.080]
Trend	$2.117e^{-5}$	0.000	2.89	0.006				
D2010q2- 2010q1	0.005	0.001	9.23	0.000				

Note: P-value of tests are presented in brackets.
Source: Own estimation.

The results show that there is only minor influence of gross external debt on total factor productivity dynamics that is significant at the 5% significance level. Influence of external debt on the capital stock is negligible as coefficients for debt with 2 and 3 lags compensate each other. No direct influence of debt on economic growth can be identified.