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Financial Stress and Economic Contraction in Belarus

This brief summarizes the results of an analysis of financial stress episodes in the Belarusian economy. Based on a principal component analysis, I construct a financial stress index for Belarus (BFSI) that incorporates distinctive indicators for the banking sector, exchange market and external debt risks covering the period January 2004 to September 2016. Next, I identify episodes of financial turmoil in Belarus using the BFSI and assess the consequences for the real economy. Finally, I investigate the long-run relationship between financial stress and economic activity in Belarus.

It has become conventional wisdom that a well developed and smoothly operating financial system is critically important for economic growth (see Levine, 2005). It helps in overcoming frictions in the real sector, influencing economic agents' savings and investment behavior, and therefore enabling the real economy to prosper (Beck, 2014).

In contrast, financial stress to financial system can be defined as the force that influences economic agents through uncertainty and changing expectations of loss in financial markets and financial institutions. It arises from financial shocks such as banking or currency crises (Iling & Ying, 2006). Consequently, the current stress level in the financial system can be quantified by combining a number of key individual stress measures into a single composite indicator – the Financial Stress Index (FSI).

In practice, such indices are already widely used, and allow regulators to maintain financial stability and help investors to assess the overall riskiness of investments in financial instruments of the country. The FSI for Belarus (BFSI) has been estimated for the first time and can be used as an early warning signal of systematic risk in the Belarusian financial sector (Mazol, 2017). In the financial context, systematic risk captures the risk of a cascading failure in the financial sector, caused by inter-linkages within the financial system, resulting in a severe economic downturn.

Construction of the FSI for Belarus

Based on a principal component analysis, the calculated index incorporates distinctive indicators for banking-sector risk estimated by the Banking Sector Fragility Index (BSFI), currency risk assessed by the Exchange Market Pressure Index (EMPI), and the external debt risk proxied by the growth of total external debt.

The BFSI reflects the probability of a crisis (episode of financial stress) – the smaller is the indicator, the better. The stability regime ends, when the BFSI exceeds a predetermined threshold. In particular, episodes of financial stress are determined as the periods when the BFSI is more than one standard deviation above its trend, which is captured by the Hodrick–Prescott filter. The identified episodes of financial stress show that one or more of the BFSI's subcomponents (banking, external debt or foreign exchange) has changed abruptly.

Episodes of financial stress

During 2004—2016, two episodes of financial stress were detected in the economy of Belarus (see Figure 1). In both cases, there were large devaluations of the Belarusian currency, caused by the need to adjust its real exchange rate.

Figure 1. Episodes of financial stress in Belarus 2004—2016
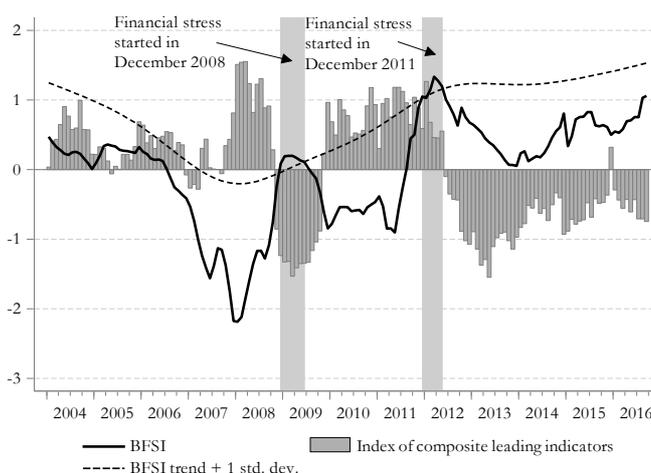
Source: Author's own calculations.

The first episode began in December 2008 and ended in May 2009. This episode was mainly a consequence of the global economic and financial crisis that caused a deep recession in Russia, reducing Russia's demand for import of products from Belarus, further loss of competitiveness due to the sharp depreciation of the Russian ruble and deterioration of the current account balance and the depletion of foreign exchange reserves.

The second episode of financial stress began in December 2011 and ended in May 2012. It was caused by the renewed unbalanced

macroeconomic policy aimed primarily at boosting aggregate demand by increasing government spending and accelerating economic growth; and monetary policy aimed at targeting the exchange rate. All this has led to problems in the foreign exchange market that eventually encompassed issues in the banking sector and caused a sharp reduction in foreign exchange reserves.

Financial stress and recessions

Figure 2 shows the contribution of each of the sub-indices to the increase in the BFSI.

Figure 2. The dynamics of components of BFSI during 2004-2016
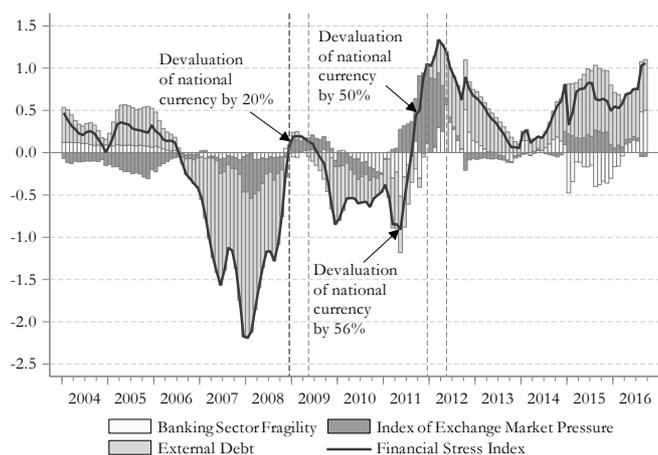

Source: Author's own calculations.

The main feature of the graph is that the currency stress is the prevailing factor in the two identified stress episodes. However, while the origins of the second episode were in the currency market, by early 2012, the stress had become much more broad based – the banking stress and the external debt stress contributed significantly to BFSI growth at the same time.

In contrast, since the beginning of 2016 until the end of the observation period, an upward movement in the BSF sub-index was detected indicating that the National Bank of Belarus (NBB) had to be worried about instability in the banking sector, which was mostly related to a loans crisis of state-owned enterprises (SOEs). A loans crisis of SOEs in Belarus means the inability of these enterprises to repay their debts and the need for budget coverage of their obligations and investments in fixed capital (see Figure 3). This happened due to a significantly higher cost of capital for SOEs after the second episode of the financial stress had begun.

Figure 3. Sources of investment financing and overdue loans of Belarusian enterprises
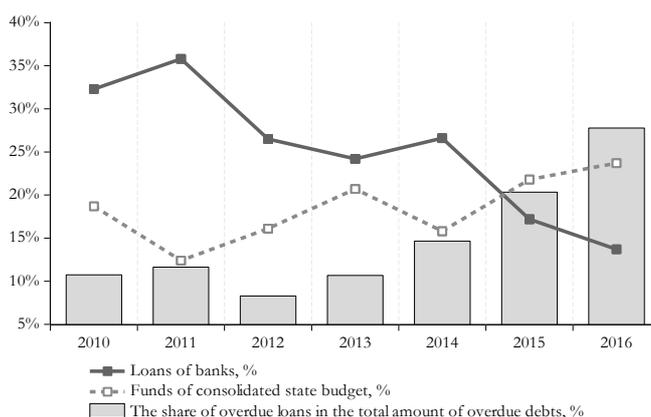
Source: Belstat.

Correspondingly, in the late 2016, the above problems have amplified the external debt stress (lack of external financing) in the economy of Belarus (see Figure 2).

Next, the results showed that financial stress negatively influences economic activity proxied by the index of composite leading indicators (CLI). In particular, an increase by one standard deviation (s.d.) in the BFSI leads to the contraction in the CLI index by 0.5 s.d. (see Mazol, 2017).

Moreover, financial stress has caused significant real output losses. The first episode of financial stress has resulted in the contraction of GDP by 5.9%. Second one has pushed Belarusian economy into a severe recession, which lasted 52 months with cumulative output losses about 12.9% of GDP (see Table 1).

Table 1. Descriptive statistics on episodes of financial stress and recessions in Belarus

Episodes of financial stress	Duration (months)		Output loss[a] (% of GDP)	Number of months after start of financial stress to recession
	Financial stress	Recession[b]		
December 2008 – May 2009	6	12	-5.85	0
December 2011 – May 2012	6	52	-12.89	6

Note: a) output loss is measured as GDP below trend during recession; b) a recession is occurred if there was a serious contraction in the economic activity (CLI) during six month or more. *Source*: Author's own calculations.

Finally, a great reliance of Belarusian economy on external financing is associated with longer and sharper downturn in the aftermath of second episode of financial stress (see Figure 2).

Conclusion

The study has three policy implications. First, the BFSI may be considered as a comprehensive indicator that successfully determines the main episodes of financial stress in Belarusian economy and can be used to study their macroeconomic consequences.

Second, the BFSI identifies the most salient stress factors for Belarus, thereby showing which financial sectors need to be monitored carefully by national regulator to avoid a critical buildup of risks in the financial system.

Third, efforts to confine financial stress will support the country's economic activity in the long run, which may include intervention in the foreign exchange market and build up of investor confidence in the economy.

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