

Domestic Macroprudential Policy and Inward Transmission of Foreign Monetary Shocks: The Case of Russia

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Outline

1. Motivation
2. Methodology
3. Data
4. Findings
5. Conclusion

Motivation

- ▶ Russia, a small open economy, is exposed to the influence of the Global Financial Cycle.
- ▶ The Bank of Russia experimented with a few different macroprudential policies in the past, the most remarkable episodes being:
 - ▶ increases in reserve requirements on foreign-currency-denominated borrowing aiming to moderate excessive capital inflows in 2007-2008 and promote dedollarization of banking sector liabilities in 2013-2016
 - ▶ higher capital charges on uncollateralized high-risk consumer loans in 2013-2014 aiming to prevent excessive growth in consumer credit, which was presumably driven by cheap money worldwide
- ▶ Research question: How far can the domestic macroprudential policy go to prevent/limit excessive credit growth presumably caused by massive capital inflows from abroad?

Methodology

Panel regression with bank and time fixed effects:

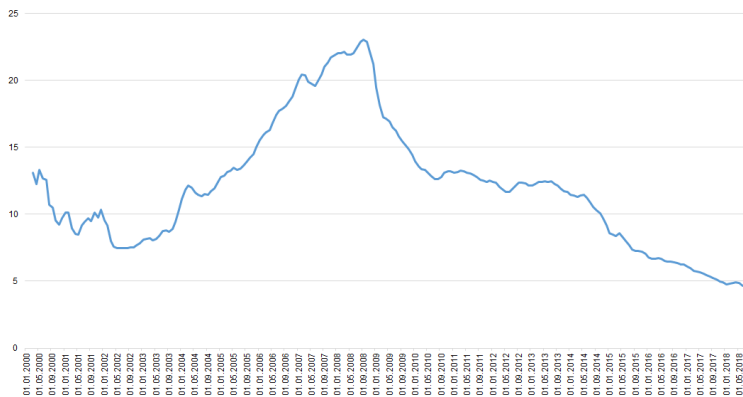
$$\begin{aligned}\Delta Loans_{it} = & \sum_{k=0}^3 \beta_k Foreign_{i,t-4} MP_{t-k}^{US} \\ & + \sum_{k=0}^3 \gamma_k Foreign_{i,t-4} MPP_{t-4}^{RU} MP_{t-k}^{US} \\ & + controls_{it} + \eta_i + \zeta_t + \epsilon_{it}\end{aligned}$$

where *Foreign* is the ratio of foreign liabilities to total assets, MP^{US} a proxy for US monetary policy shocks, MPP^{RU} the stance of macropru policy in Russia.

Variable definitions

- ▶ The dependent variable is quarterly growth rate of loans to private non-financial borrowers by bank i in quarter t , separately, in RUB and in USD.
- ▶ Do not consider foreign currencies of loan denomination other than USD: about 90% of trans-border borrowing and foreign-currency lending in Russia was in USD over the sample period.
- ▶ *Foreign* – bank's external funding ratio defined as the ratio of liabilities to nonresidents to total assets.
- ▶ Monetary policy shocks in the US are obtained through a high-frequency identification procedure as suggested in Gertler and Karadi (2015).
- ▶ The proxy for domestic macroprudential policy stance in Russia is based on a recently compiled IMF database (Cerutti et al, 2016).
- ▶ Bank controls: bank size, leverage, core deposit ratio, liquid assets ratio.

Foreign funding ratio: cross-section average



2008	3	RussianFederation	-1	On 1 July 2008, the central bank raised the reserve requirement ratio on credit institutions' liabilities to non-resident banks in all currencies from 5.5% to 7%, the ratio on individual deposits in local currency from 4.5% to 5%, and the ratio on credit institutions' other deposits from 5% to 5.5%. On 18 September 2008 after the Lehman bankruptcy, the central bank lowered the reserve requirement ratio on credit institutions' liabilities to non-resident banks in all currencies from 8.5% to 4.5%, the ratio on individual deposits in local currency from 5.5% to 1.5%, and the ratio on credit institutions' other deposits from 6% to 2%. (loosening on net)	RS_2015; KD_2015
2008	4	RussianFederation	-3	On 15 October 2008, the central bank lowered the reserve requirement ratio uniformly to 0.5%.	RS_2015; KD_2015
2009	2	RussianFederation	1	On 1 May 2009, the central bank raised the reserve requirement ratio uniformly from 0.5% to 1%. On 1 June 2009, the central bank raised the reserve requirement ratio uniformly from 1% to 1.5%.	RS_2015; KD_2015
2009	3	RussianFederation	1	On 1 July 2009, the central bank raised the reserve requirement ratio uniformly from 1.5% to 2%. On 1 August 2009, the central bank raised the reserve requirement ratio uniformly from 2% to 2.5%.	RS_2015; KD_2015
2011	1	RussianFederation	1	On 1 February 2011, the central bank raised the reserve requirement ratio on credit institutions' liabilities to non-resident banks in all currencies from 2.5% to 3.5%, the ratio on individual deposits in all currencies from 2.5% to 3%, and the ratio on credit institutions' other deposits in all currencies from 2.5% to 3%. On 1 March 2011, the central bank raised the reserve requirement ratio on credit institutions' liabilities to non-resident banks in all currencies from 3.5% to 4.5%, the ratio on individual deposits in all currencies from 3% to 3.5%, and the ratio on credit institutions' other deposits in all currencies from 3% to 3.5%.	RS_2015; KD_2015
2011	2	RussianFederation	1	On 1 April 2011, the central bank raised the reserve requirement ratio on credit institutions' liabilities to non-resident banks in all currencies from 4.5% to 5.5%, the ratio on individual deposits in all currencies from 3.5% to 4%, and the ratio on credit institutions' other deposits in all currencies from 3.5% to 4%.	RS_2015; KD_2015

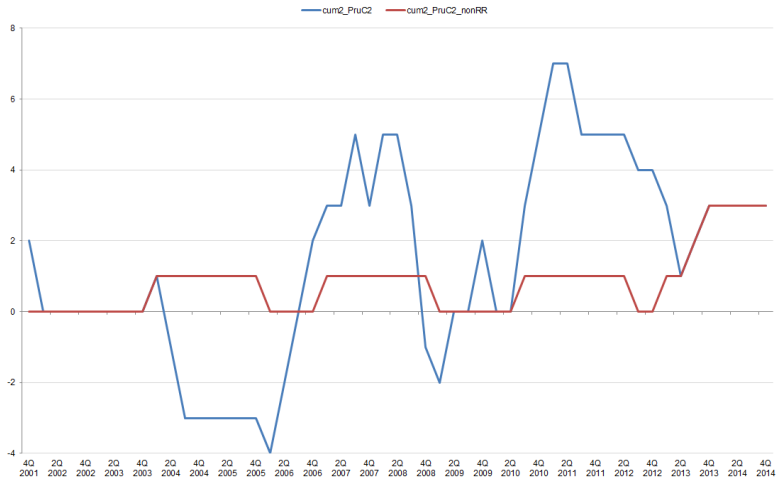
Reserve Requirements

Year	Qtr	Country	Change	Details	Sources
2000	1	RussianFederation	1	On 1 January 2000, the central bank raised the ratio on individual deposits in local currency from 5.5% to 7%.	RS_2015; KD_2015
2004	2	RussianFederation	-1	On 1 April 2004, the central bank lowered the reserve requirement ratio on corporate deposits in all currencies and individual deposits in foreign currency from 10% to 9%.	RS_2015; KD_2015
2004	3	RussianFederation	-1	On 1 July 1 2004, the central bank changed the reserve requirement system and lowered the reserve requirement ratios such that the ratio on individual deposits in local currency was lowered to 3.5%, and the ratio on other deposits was lowered to 3.5%. On 1 August 2004, the central bank introduced the reserve requirement ratio of 2% on credit institutions' liabilities to non-resident banks in all currencies. (loosening on net?)	RS_2015; KD_2015
2006	4	RussianFederation	1	On 1 October 2006, the central bank raised the reserve requirement ratio on credit institutions' liabilities to non-resident banks in all currencies from 2% to 3.5%.	RS_2015; KD_2015
2007	3	RussianFederation	1	On 1 July 2007, the central bank raised the reserve requirement ratio on credit institutions' liabilities to non-resident banks in all currencies from 3.5% to 4.5%, the ratio on credit institutions' other deposits from 3.5% to 4.5%, and the ratio on individual deposits in local currency from 3.5% to 4%.	RS_2015; KD_2015
2007	4	RussianFederation	-1	On 11 October 2007, the central bank lowered the reserve requirement ratios for all categories by 1%p from 4.5%, 4.5% and 4% to 3.5%, 3.5% and 3%, respectively.	RS_2015; KD_2015
2008	1	RussianFederation	1	On 15 January 2008, the central bank raised the reserve requirement ratios for all categories by 1%p from 3.5%, 3.5% and 3% to 4.5%, 4.5% and 4%, respectively. On 1 March 2008, the central bank raised the reserve requirement ratio on credit institutions' liabilities to non-resident banks in all currencies from 4.5% to 5.5%, the ratio on individual deposits in local currency from 4% to 4.5%, and the ratio on credit institutions' other deposits from 4.5% to 5%.	RS_2015; KD_2015

Sector Specific Capital Requirements (Consumer credit)

Year	Qtr	Country	Change	Details	Sources
2008	1	Australia	-1	Risk-weights on consumer loans fell due to the adoption of Basel II. This affects the banks adopting the advanced approach, which accounted for about 70% of total lending at the time.	APRA_2014
2010	4	Brazil	1	RWAs on personal loans increased (including car loans and payroll-guaranteed loans)	IMF_2011
2011	4	Brazil	1	The central bank increased risk weights on payroll-guaranteed loans and long term non-guaranteed personal loans, but at the same time reduced risk weights on short-term consumer loans. We judge that this is a net tightening.	IMF_2011; BIS
2014	3	Brazil	-1	The central bank reduced risk weights on personal loans (including car loans and payroll-guaranteed loans).	IBRN_IMF_2015
2010	1	Bulgaria	-1	Lower risk weights for retails exposures for banks following the standarised approach.	BIS
2004	4	India	1	RWs on consumer credit increased to 125% from 100%.	BIS
2008	2	Kuwait	1	Increase to 100% of the RW on consumer and installment loans, and debit card balance of credit cards.	GMPI_2013
2011	1	Malaysia	1	RW raised on personal loans with tenure more than 5 years.	IMF_2011
2012	2	Poland	1	Risk weights on FX den. retail exposures increased to 100%.	IMF_2011
2013	3	Russian Federation	1	Increased RW for unsecured consumer loans carrying high interest rates.	IMF_CR_310
2008	1	Turkey	1	RW for installment credit card receivables increased.	AOR_2015
2011	2	Turkey	1	Consumers loans with 1-2 year maturity given a RW of 150%, 200% if the maturity is longer than 2 years. Both increased from 100%.	IMF_2011

Stance of domestic macroprudential policy



Data

Panel data: quarterly observations for 2000-2018,
22 internationally active banks

- ▶ Synthetic bank for reorganized banks
- ▶ Delete 4 quarters of observations prior to licence withdrawal
- ▶ All balance sheet items were converted to dollars (to exclude valuation effects due to exchange rate changes)
- ▶ Discard outliers - cut top 1% and bottom 1% of the distribution for respective variables

Identification of US MP shock

- ▶ High-frequency identification (Gertler and Karadi, 2015).
- ▶ Structural Vector Autoregression (SVAR):
 - ▶ industrial production,
 - ▶ inflation,
 - ▶ 1-year rate on government securities (US MP indicator),
 - ▶ excess bond premium (Gilchrist and Zakrajšek, 2012)
 - ▶ credit spread on commercial paper
 - ▶ credit spread on mortgage loans
- ▶ Monthly cumulatives of US monetary surprises serve as “external instruments” (Mertens and Ravn, 2012; Stock and Watson, 2012) for US MP shock.
- ▶ US MP shock is identified as the OLS projection of the reduced-form VAR innovation of the 1-year rate on monthly cumulatives of US monetary surprises (i.e. as predicted values from the first-stage IV regression).

Main findings

In response to a negative US monetary shock of 0.5 p.p., the growth rate of credit portfolio of a Russian bank with foreign liabilities of 10 percent of total assets rises by 4 p.p. for foreign-currency-denominated loans and by 2 p.p. for ruble-denominated loans during one-year period. The effect is statistically and economically significant.

A tight stance of domestic macroprudential policy, with the cumulative index being equal to 2, tends to *partially* offset the stimulating effect of loose foreign monetary policy. The estimated effects are 1 p.p. for foreign-currency-denominated loans (statistically significant at 10%) and 0.6 p.p. for ruble-denominated loans (statistically significant at 5%).

Conclusions and further steps

- ▶ The effect of a positive monetary shock (tightening) in the US is "more negative" for banks with greater exposure to foreign funding.
- ▶ Domestic macropru policy (partially) offsets the effect of foreign monetary shocks: a tighter MPP just before the arrival of the US shock makes its effect "less negative."
- ▶ Both effects are statistically and economically significant.
- ▶ Extension: look at the effect of MPP targeting a specific sector on bank lending to this sector (consumer credit, housing)