



საქართველოს ეროვნული ბანკი
National Bank of Georgia

Tradeoffs Between Macroprudential Policies and the Real Economy

Zviad Zedginidze
Head of Financial Stability Department

**The 12th Edition of the Seminar on
Financial Stability Issues
November 2018**

Outline

- The New Macroprudential Frameworks
 - Impacts of the Banking Sector on the Real Economy: Broadening Macroprudential Mandate
 - Implications of Dollarization on Systemic Risk Amplification
- Quantification tool for analysis of Macroprudential Policy tradeoffs
- Brief example of scenario analysis
 - Permanent Slowdown in Regional Growth
 - Household Indebtedness
- Communication and governance
- Key Takeaways

The New Macroprudential Frameworks

- The Great Financial Crisis revealed the drawbacks of existing prudential regulations focusing on the stability of individual financial institutions;
- With the emergence of **macroprudential frameworks**, the policy focus was changed to the stability of the financial system as a whole and **its impact on the real economy**
- BIS, FSB, IMF define **systemic risk**: “ the disruption of the flow of financial services that is caused by an impairment of all or parts of the financial system; and has the potential to have serious negative consequences for the real economy”
- The new Macroprudential policy framework is all about acknowledging **Systemic Risk Amplification (SRA)** mechanism
 - macrofinancial feedback effects that can **endogenously** magnify and prolong the impact of even moderate shocks
- Thus, key tradeoffs imbedded in macroprudential policy is **long term gain vs short term costs**.

Dollarization: as one more friction to the developing small open economies

- Macrofinancial feedback effects are generated through the frictions in the financial intermediation and lead to **procyclicality of the financial system**
 - Traditionally, collateral constraints, costly state verification and optimism/pessimism cycles have been understood as the main sources of SRA
- In the context of a small open economy, financial **dollarization** can also serve as a systemic risk amplifier, thus exacerbating the procyclicality of the banking sector
 - Amplification also works through **balance sheet**: procyclical movement of domestic currency exchange rate affects the existing debt burden and leverage.
- Therefore, the real consequences of procyclicality are even more severe for dollarized economies
 - Accordingly, the potential benefits of well-designed macroprudential framework are also larger.

Macro-financial model as tool for quantification of policy tradeoff analysis



Capturing macroprudential policy tradeoffs

- We employ macro-financial modeling to structure thinking and facilitate policy analysis by clearly showing the main tradeoffs confronted by macroprudential policy.
- The modelling framework at NBG is based on small open economy New-Keynesian DSGE approach enriched with relevant financial variables and proper real-financial feedback loops.
- Alongside with standard monetary policy, it incorporates endogenous macroprudential policy;
- Model has a non-linear structure: the equations are left in exact form where possible. This enables us to model non-linear impact of large-size shocks.

Applications of macro-financial modeling

- It is designed to simulate consistent macro-financial risk scenarios with the main goal to identify systemic risks stemming from endogenous feedbacks.
- This is not a tool to conduct a forecasting exercise in a traditional sense, as many of the macro-financial interactions and non-linear processes are highly uncertain in quantitative terms. However, it can be complemented with other satellite models to produce a forecast.

Brief example of scenario analysis

Scenario Analysis: Slowdown in Regional Growth

- Scenario assumes slowdown in major trading partners due to reduced commodity prices, which leads to deteriorated TOT and slowdown in potential growth of the economy
 - **potential growth is reduced by 1pp**
- Market participants are optimistic relative to fundamentals, which leads to traditional optimism/pessimism cycle. This later leads to **painful deleveraging** and reversing initial appreciation.
 - In anticipation of future recovery and currency appreciation corporates and households increase FX leverage, that leads to temporarily overvalued currency.

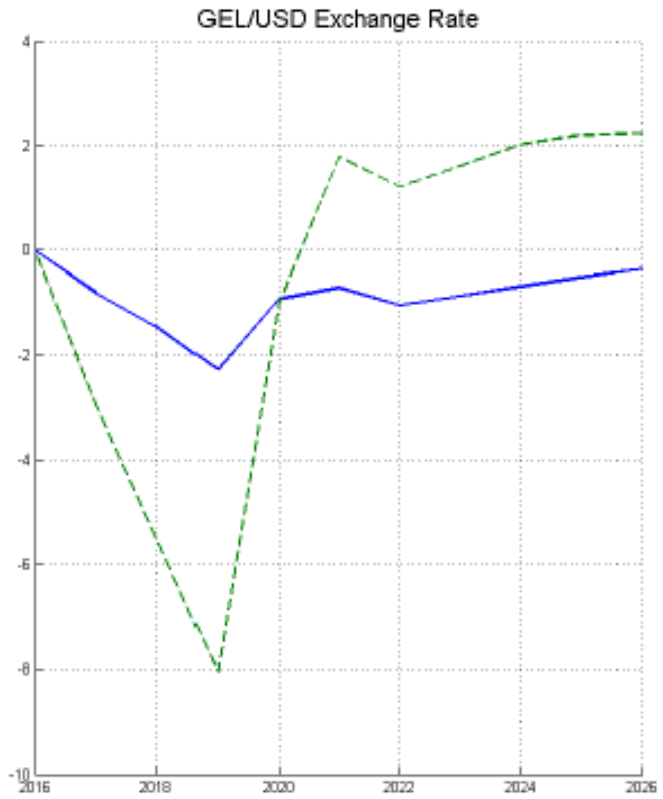
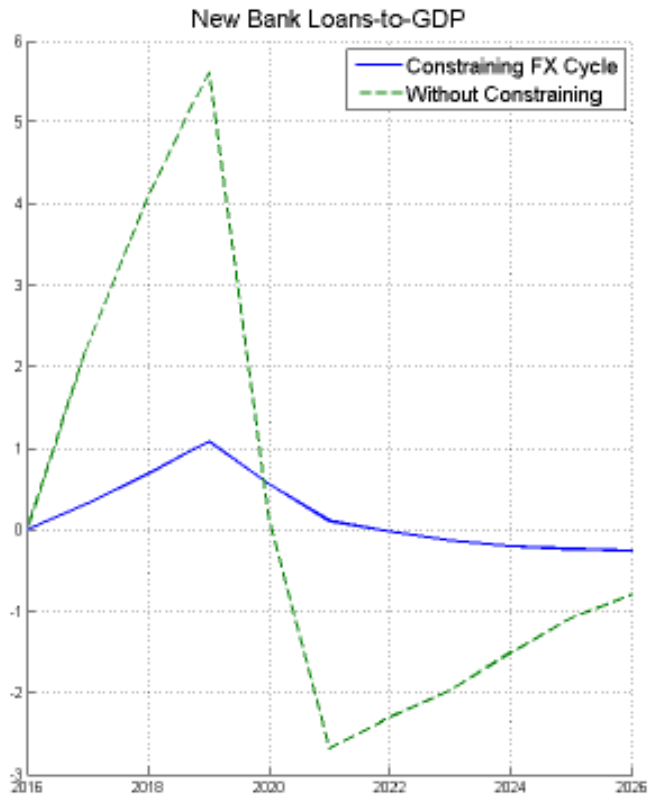
Scenario Analysis: Slowdown in Regional Growth

Scenario	Permanent slowdown in regional growth (shown)	Confidence shock
Type of the shock	Supply shock	Demand shock
Source of the shock	Trading partners	Consumers/Businesses
Main propagator of the shock	Banking sector and liability dollarization	No particular propagator
Optimal macro-prudential policy	Constraining FX loans	Counter-cyclically
Effect on Exchange Rate	Significant	Modest

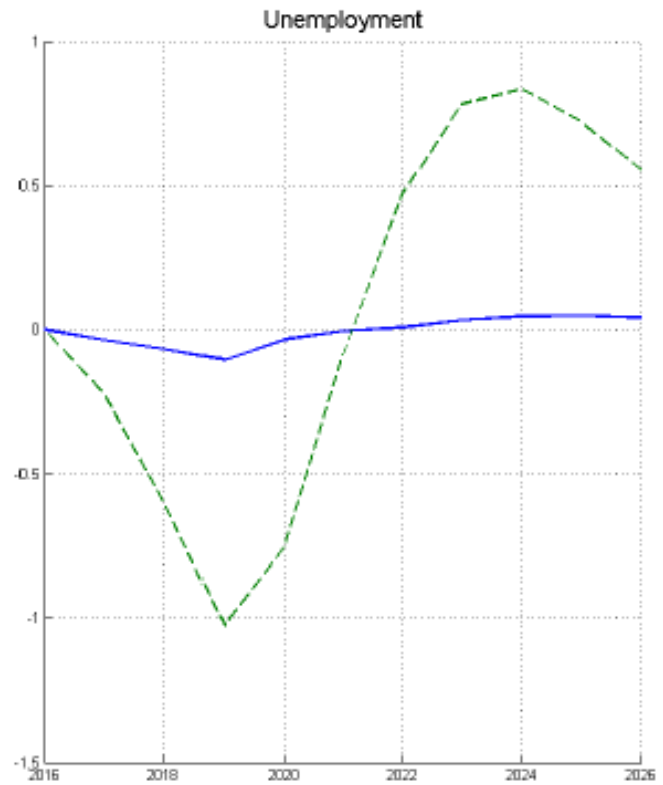
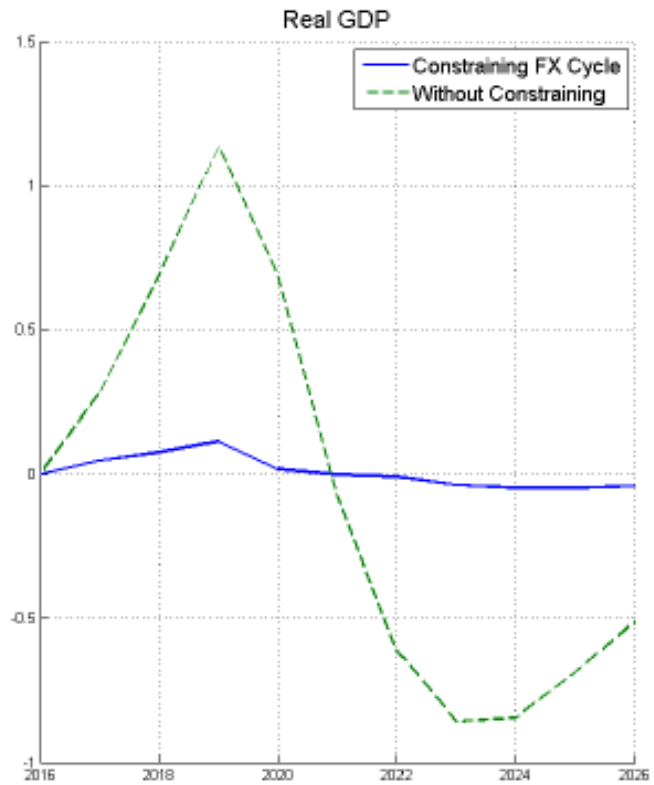
To see how macro-prudential policy should respond to this kind of shock, **two cases** are analyzed with alternative policy responses:

- One, in which **FX loans are allowed to increase** based on overly optimistic expectations, which result in temporary currency appreciation and output growth.
- Second, in which new **FX credit is constrained** by the policy to prevent build up in₁₀ FX debt.

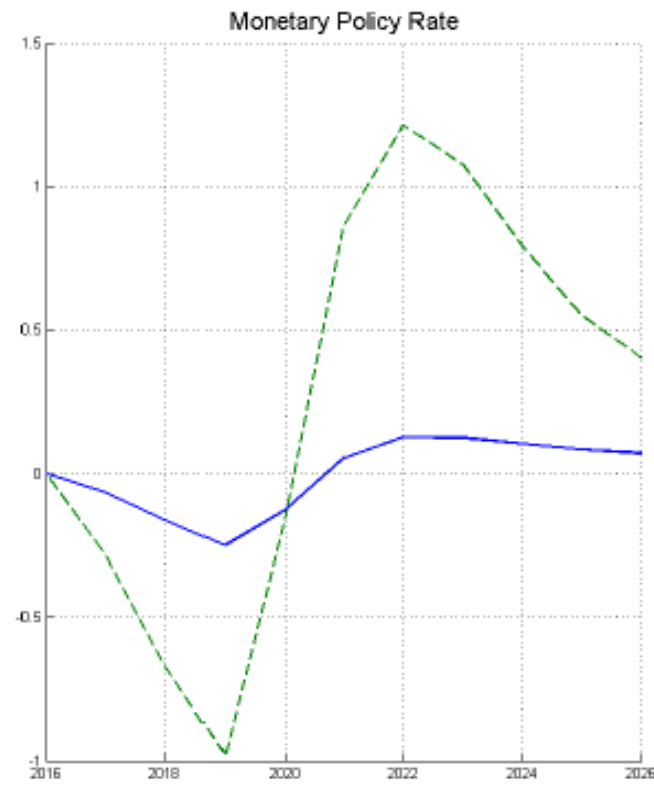
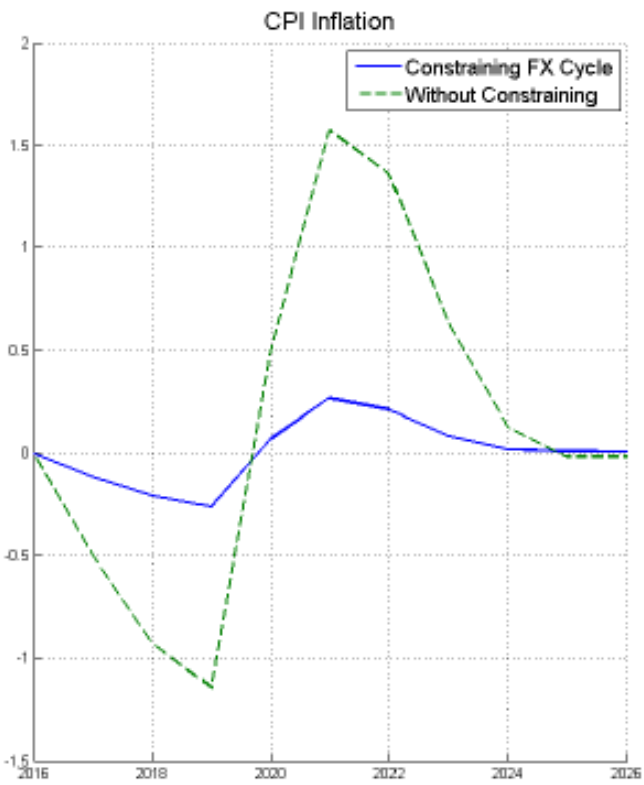
Scenario Analysis: Simulation Results



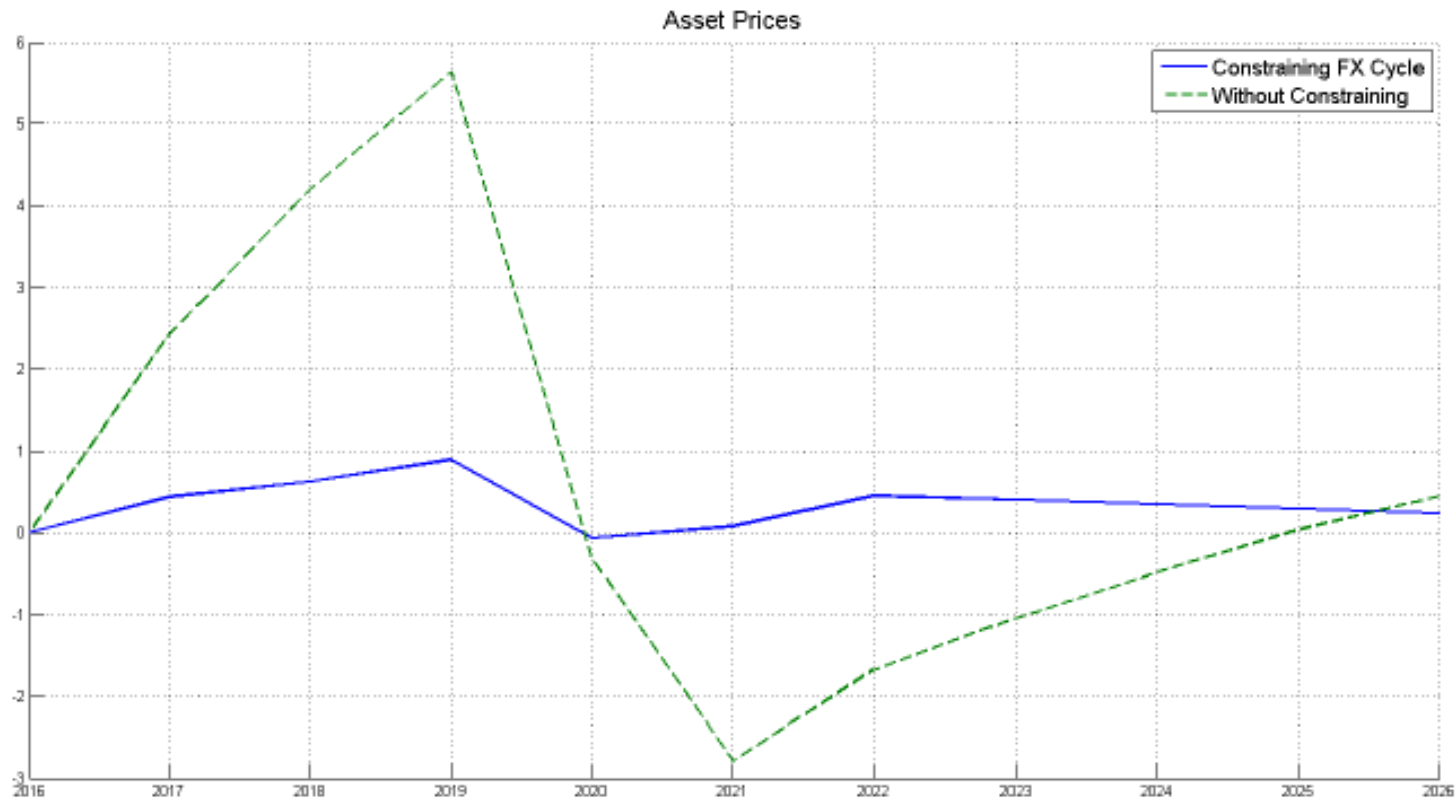
Scenario Analysis: Simulation Results



Scenario Analysis: Simulation Results



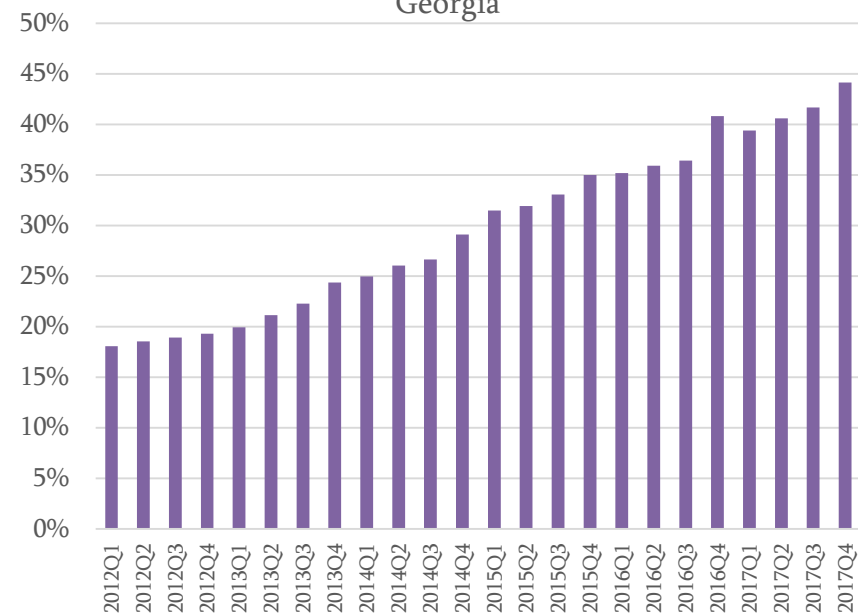
Scenario Analysis: Simulation Results



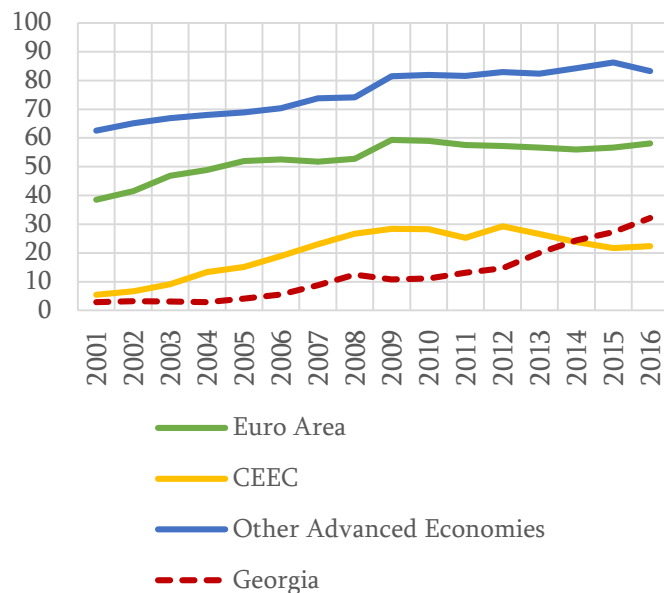
Another example of Policy tradeoff: HH indebtedness case of Georgia

- GFSR (October, 2017): “... there is a trade-off between the short-term benefits of rising household debt to growth and its medium-term costs to macroeconomic and financial stability. Moreover, higher growth in household debt is associated with a greater probability of banking crises.”
- Dependence on consumer loans has been excessively increased in Georgia over the recent years.

Household Debt/Household Disposable Income in Georgia



Household Debt-GDP Ratio



Source: NBG, GEOSTAT, GFSR

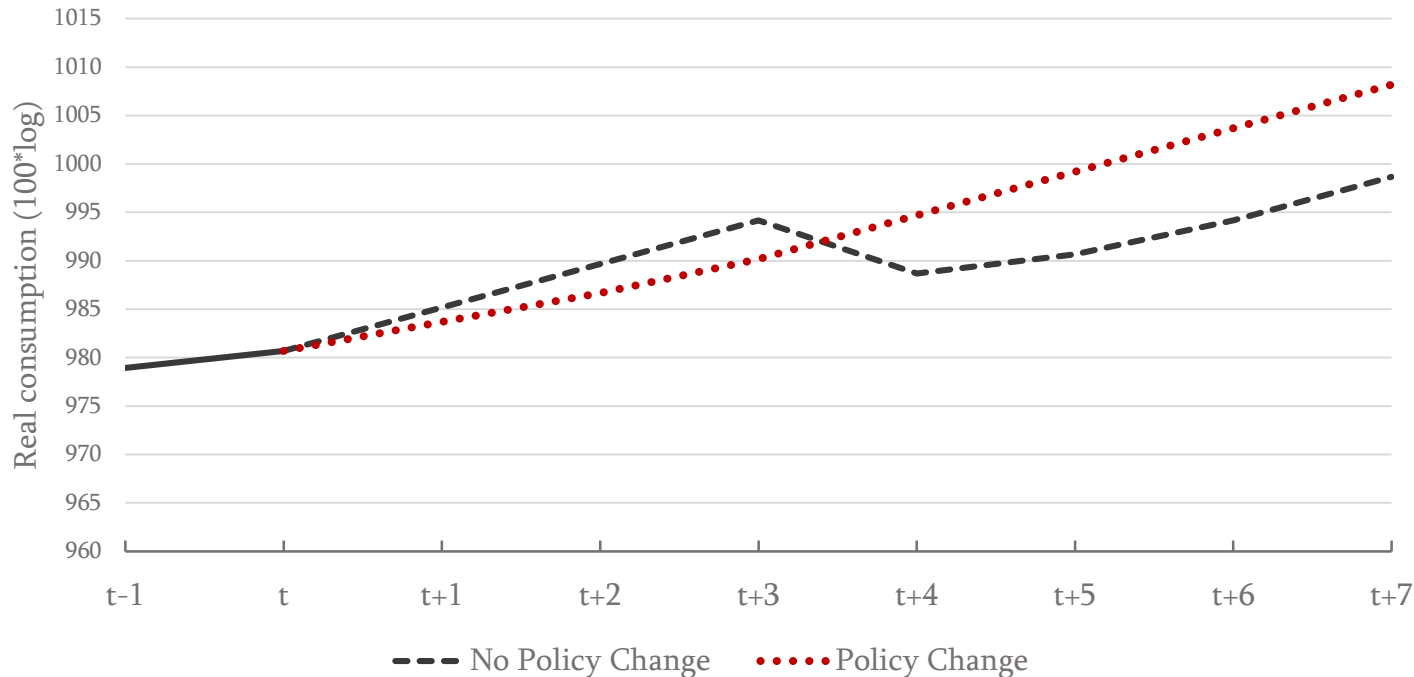
Macroprudential response to mitigate HH indebtedness risks

- It is important to efficiently implement adequate and timely macroprudential measures to avoid the further compounding of household over-indebtedness problem
- Within the Responsible Lending Framework, National Bank of Georgia is introducing limits on PTI and LTV ratios for household loans
- It is essential to consider that, on one hand, radical tightening of macroprudential regulations may lead to the movement of lending activity into the shadow financial sector. On the other hand, the unsustainable growth of household loans will eventually lead to painful deleveraging consequences if left unaddressed.

Macroprudential response to mitigate HH indebtedness risks

- In order to assess the tradeoffs of the proposed regulation, a theoretical simulation exercise has been undertaken.
- It has been estimated that the regulations might have a minor negative effect on consumption in the short-run, though its medium and long-term impact will clearly be positive
- Thus, effective communication of the long term benefits is essential for successful implementation

Real consumption path



Communication and Governance

- Effective communication of macroprudential policy objectives and policymaking process is key to building credibility and delivering its long term benefits
 - Since the ultimate objective of financial stability might be hard to measure, a set of well-defined intermediate objectives should be in place
 - Macroprudential policymaking process must be transparent to communicate financial stability risks and corresponding preventive or remedial actions
- Macroprudential policy cycle in NBG:
 - The Financial Stability Committee meeting once a quarter
 - A press release published after each meeting
 - A press conference after the FSC meetings twice a year
 - Annual Financial Stability Report.

Communication and Governance

- The institutional arrangements governing macroprudential frameworks must ensure:
 - Alignment of financial stability mandate with decision-making powers;
 - Presence of incentives to act;
 - Transparency and accountability;
 - Effective coordination with other policy objectives.
- Looking ahead, given the complexity of financial stability objective, macroprudential frameworks should be embedded in more comprehensive macro-financial stability framework together with supervision as well as monetary, fiscal and structural policies (BIS, 2018)

Key takeaways

- Within macroprudential frameworks, the policy focus has been changed to the stability of the financial system as a whole and its **impact on the real economy**;
- Systemic risk amplification works through macro-financial feedback effects;
- In a small open economy, dollarization becomes an additional systemic risk amplifier;
- Tradeoff between macroprudential policy and real economy is all about short term pain vs long term gain.
- Effective communication can be considered as a tool by itself that can help alleviate macroprudential policy tradeoffs by clarifying the impact of relevant risks and the benefits of corresponding mitigants.



Appendix: About the model



Financial Block

Financial block, the most important part for current purposes, is incorporated in the model in a reduced-form way.

Asset prices reflect possible optimism/pessimism about the future of the economy, and is a function of expected future outputs.

Deleveraging impulse comes from imbalances in the leverage of borrowers and reflect financial accelerator effect. The higher is this impulse the stronger is its' negative effect on future credit growth and output.

Part of the stock of loans is dollarized, i.e. exchange rate movements have valuation effects on the stock of credit and, hence, leverage.

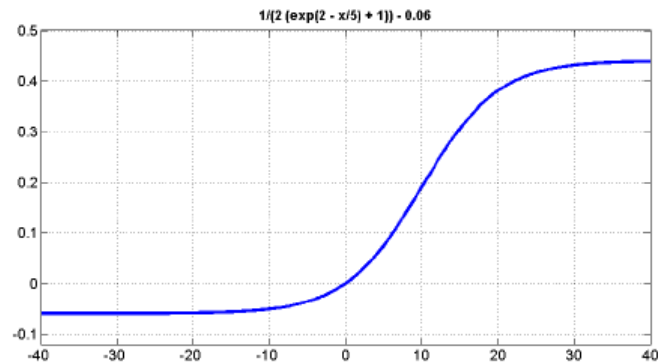


Financial Block

The effect of the financial block on the real economy is highly non-linear. i.e. low leverage and financial stability in the economy does not cause boom to the same extent as high leverage (that precedes deleveraging) and financial instability cause a painful recession.

Deleveraging term proxies some of the effects of deleveraging on the real economy. It enters IS curve as well as the discount rate in asset price equation;

The impact of **borrowers' distress** on the economy is modeled in the following way (the x axis measures the deviation of leverage from its steady-state):



Macroprudential policy

- **Capital requirement:** Macroprudential policy adjusts minimum required capital to smooth financial cycles
- **Additional regulatory cost:** Macroprudential policy has another instrument that can target the LCY and FCY loans separately. The instrument works by increasing the cost of loan issuance to the banks.



Macroeconomic Block

Macroeconomic part of the framework is a standard small open economy model:

- Demand side is represented by a **standard new IS curve, but enlarged with financial linkages**. In particular, output gap in addition to its lag, expectations, real interest rate and effective exchange rate, also depends on asset prices, deleveraging needs and possible financial distresses (modeled in a non-linear way)
- Supply side is represented by a **standard new Phillips curve augmented with balance sheet effects on the producers side**. This captures the exchange rate effect via producers' dollarized loans.



Exchange rate is determined through **modified UIP condition**.

- Modification implies partially backward-looking exchange rate expectations depending on the degree of over/undervaluation.
- In addition, changes in FX leverage also affect the exchange rate through capital flight. Levering up causes appreciation and levering down causes depreciation

Policy interest rate adjusts according to a **standard reaction function of the monetary authority**, i.e. depending on inflation deviation from its target and the output gap.



Endogenous Credibility

This is to reflect that for developing economies with a history of high inflation credibility of a central bank is relatively fragile and depends on the inflation performance relative to its target.

when a central bank loses its credibility

- Inflation expectations become more backward looking, which worsens inflation/output trade-offs and makes **disinflation more costly**.
- **Risk premiums rise** as the erosion of central bank credibility is usually associated with heightened uncertainty.

