



NATIONAL BANK OF ROMANIA

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Non-performing phenomenon and related spillovers on economic equilibrium

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Presentation outline

- Motivation
- Current environment
- The macro-financial dimension of the non-performing phenomenon
- Investigation of NPL spillovers
- Conclusions

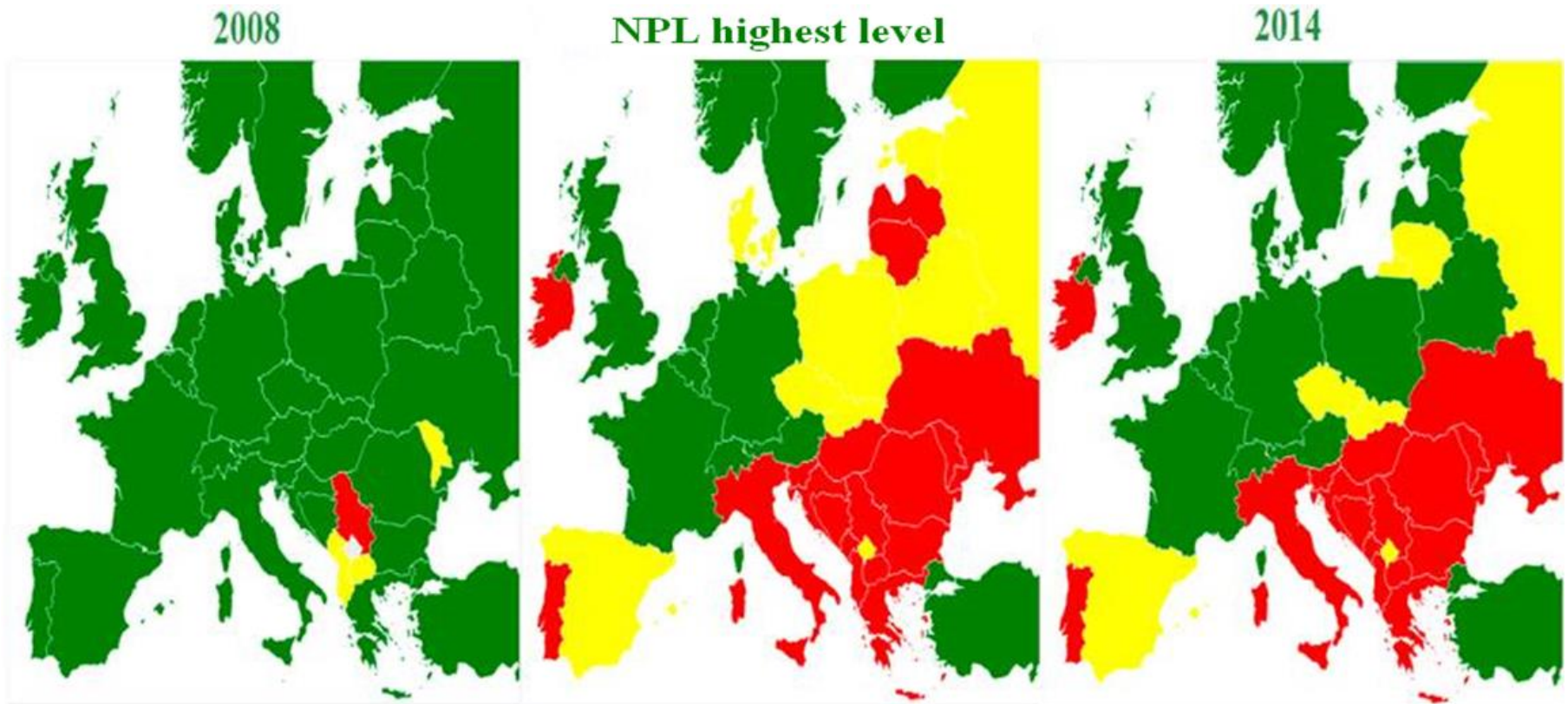
Motivation

- Difficult challenge for European credit institutions, given the high level of non-performing exposures
- Is it possible to attain sound economic growth without a resolution for non-performing exposures?
- But is it possible to look for credible resolution of non-performing exposures without sound economic growth?
- Need for a proper understanding of the interaction between business and financial cycles

Current environment

Current environment: a map of NPLs in Europe

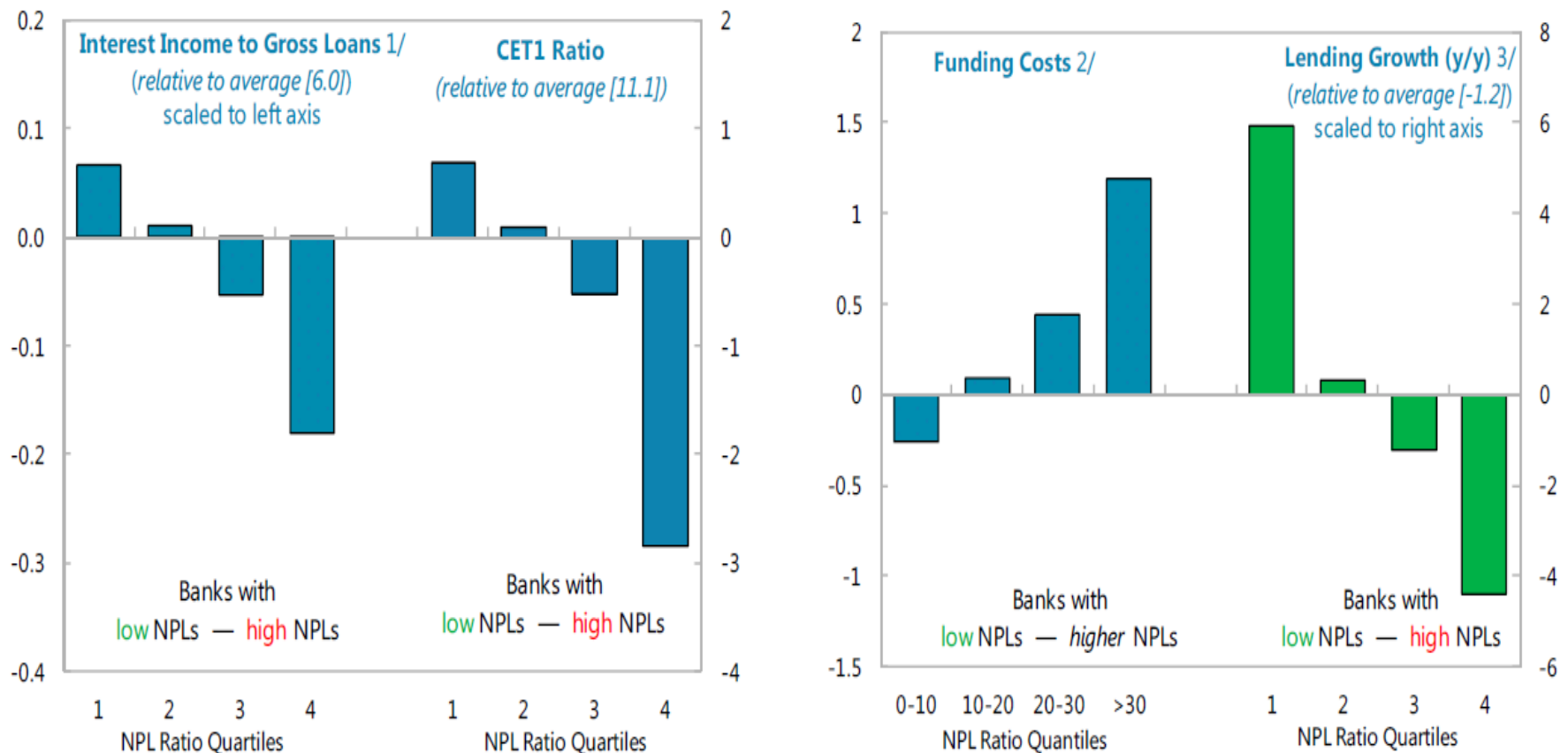
■ NPL < 5 % ■ 5 % < NPL < 10 % ■ NPL > 10 %



Source: IMF (A Strategy for Resolving Europe's Problem Loans, 2015)

Current environment: a macro-financial snapshot (I)

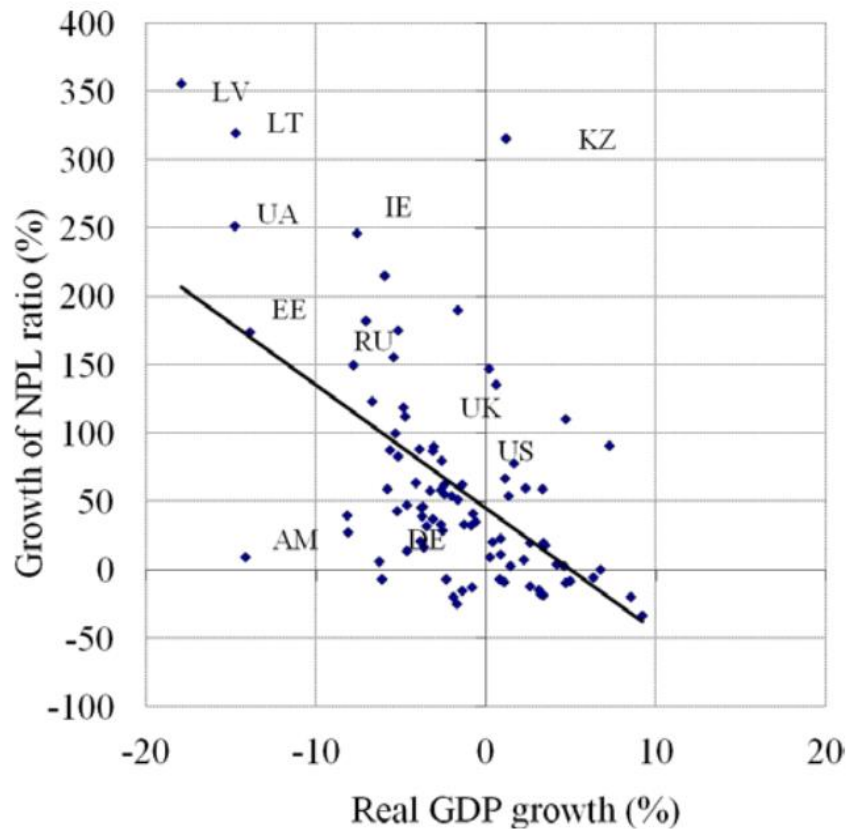
- Empirics show that non-performing exposures weaken the resilience and viability of banks even in developed economies (as Euro Area)



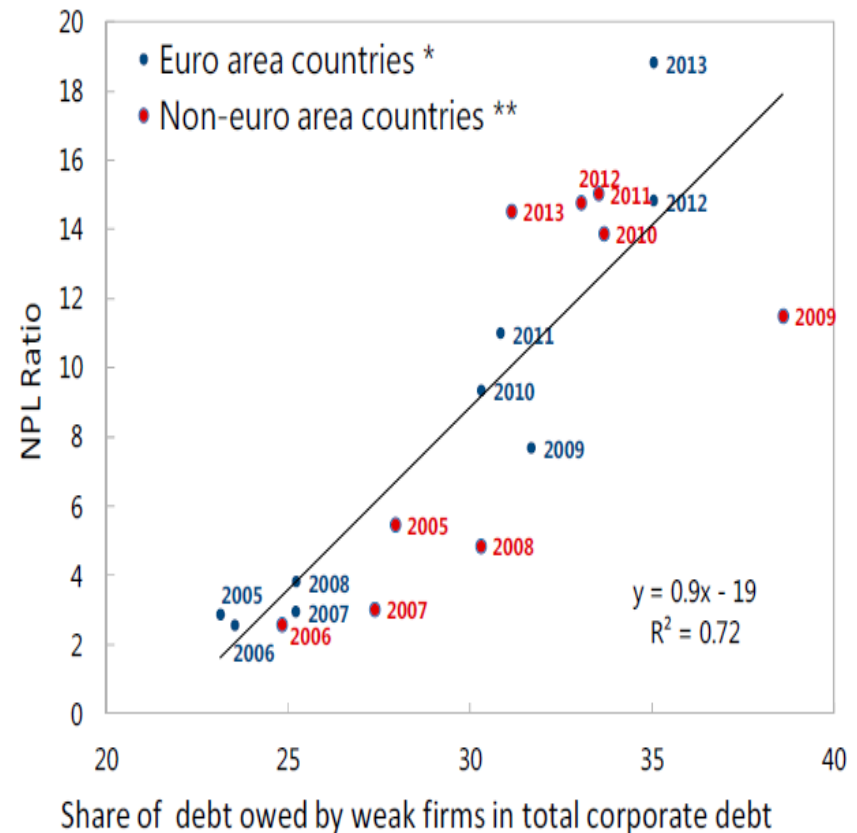
Source: IMF (A Strategy for Resolving Europe's Problem Loans, 2015)

Current environment: a macro-financial snapshot (II)

- There is evidence of a strong connection between non-performing exposures and macroeconomic fundamentals



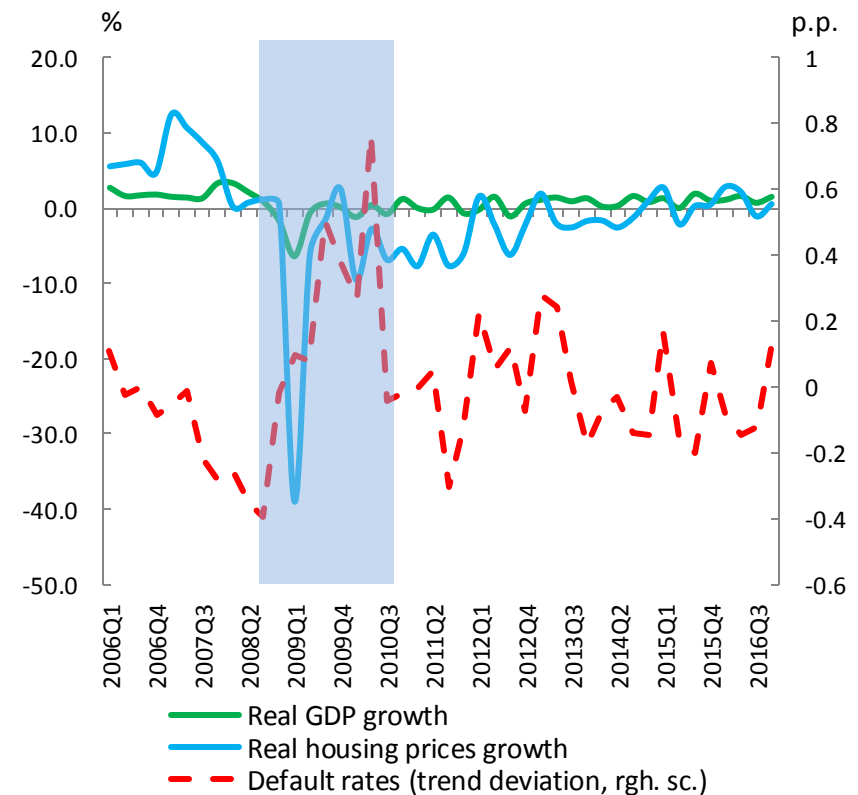
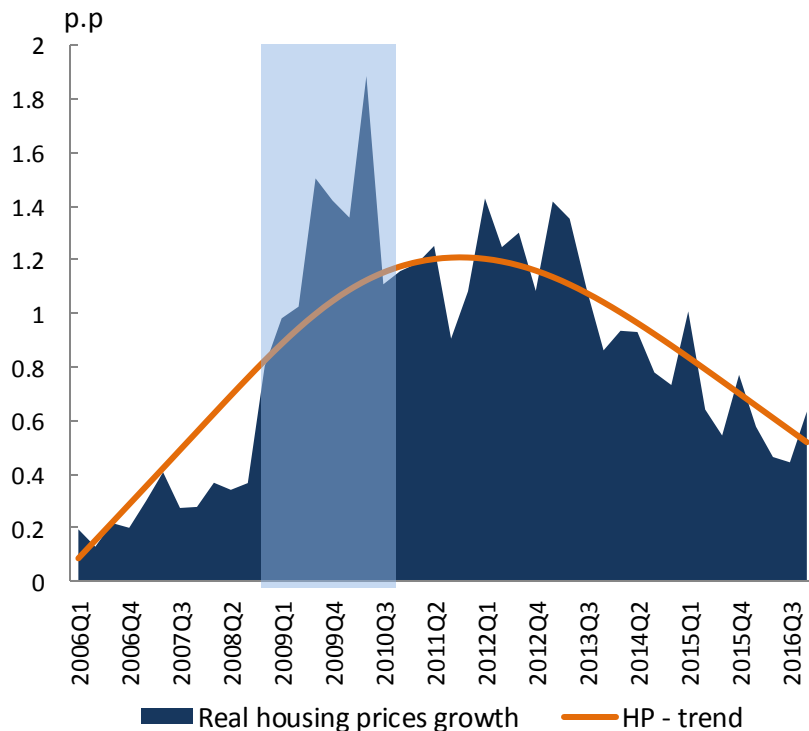
Source: ECB (Non-performing loans: What matters in addition to the economic cycle?, 2013)



Source : IMF (A Strategy for Resolving Europe's Problem Loans, 2015)

Current environment: Romanian economy

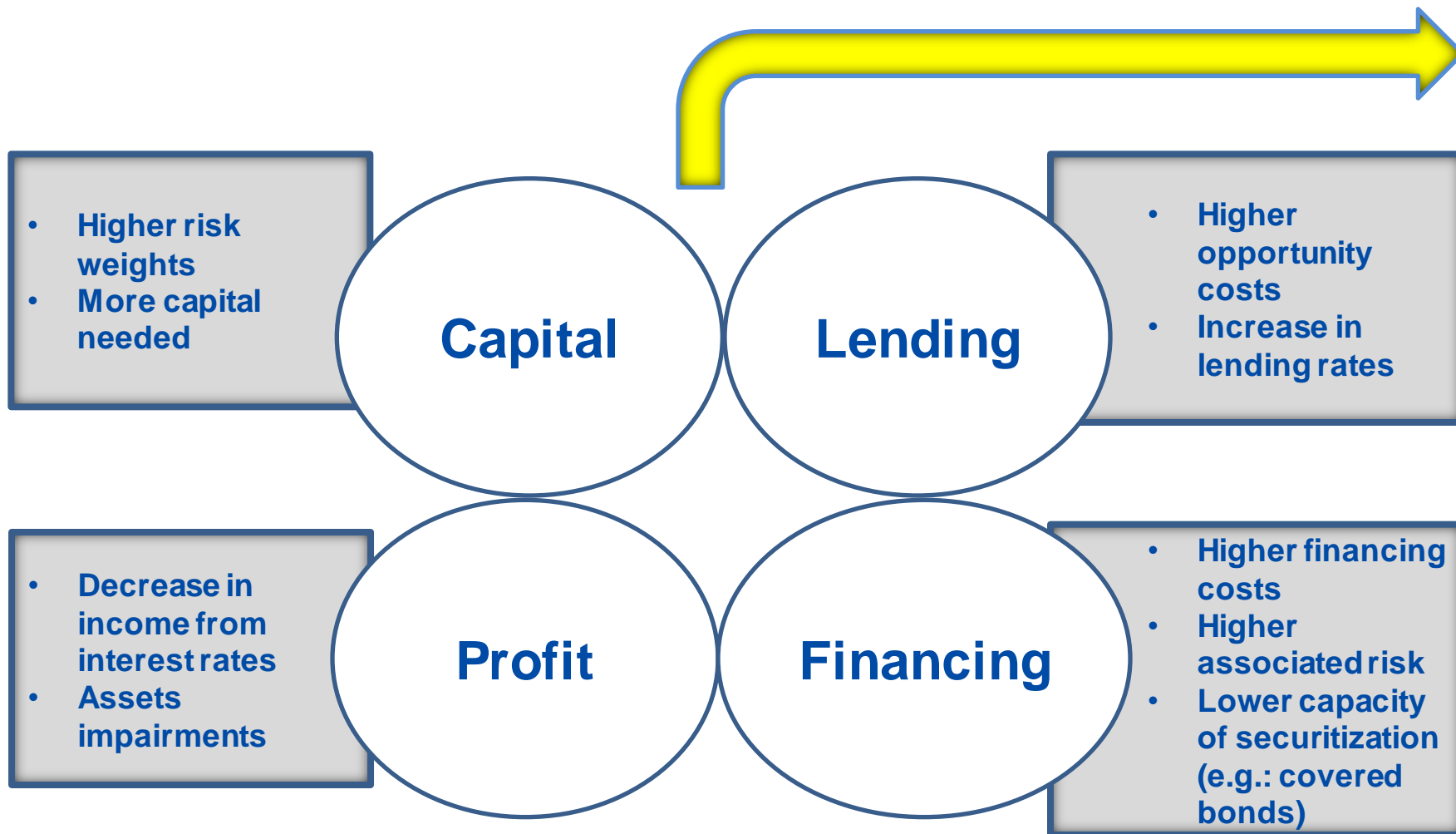
- Romania has experienced a significant increase in NPLs, together with a sharp contraction of real activity and assets prices



Source: NBR, Eurostat, own calculation

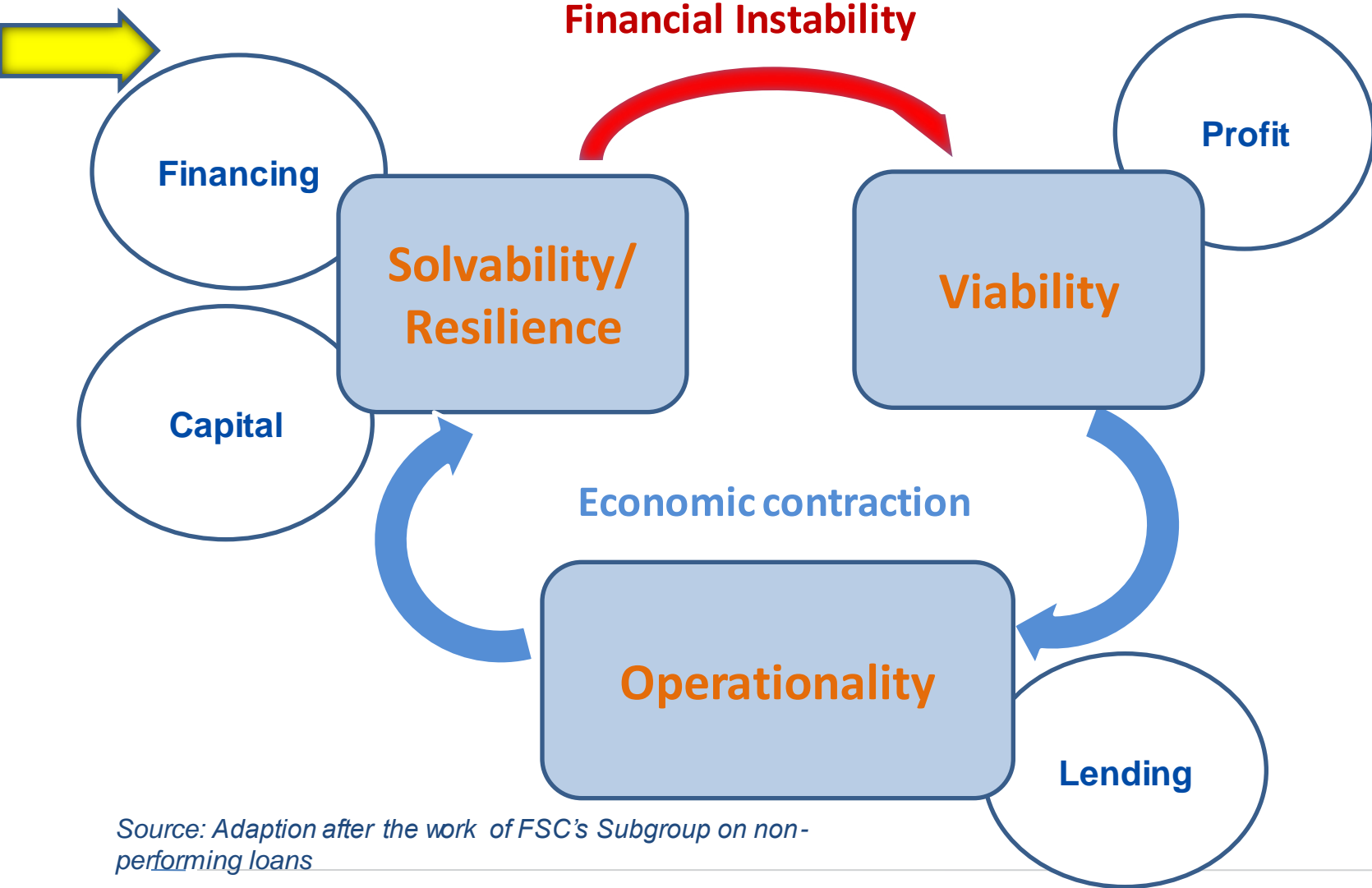
The macro-financial dimension of the non-performing phenomenon

The macro-financial dimension of the non-performing phenomenon: impact on banks



Source: Adaption after the work of FSC's Subgroup on non-performing loans

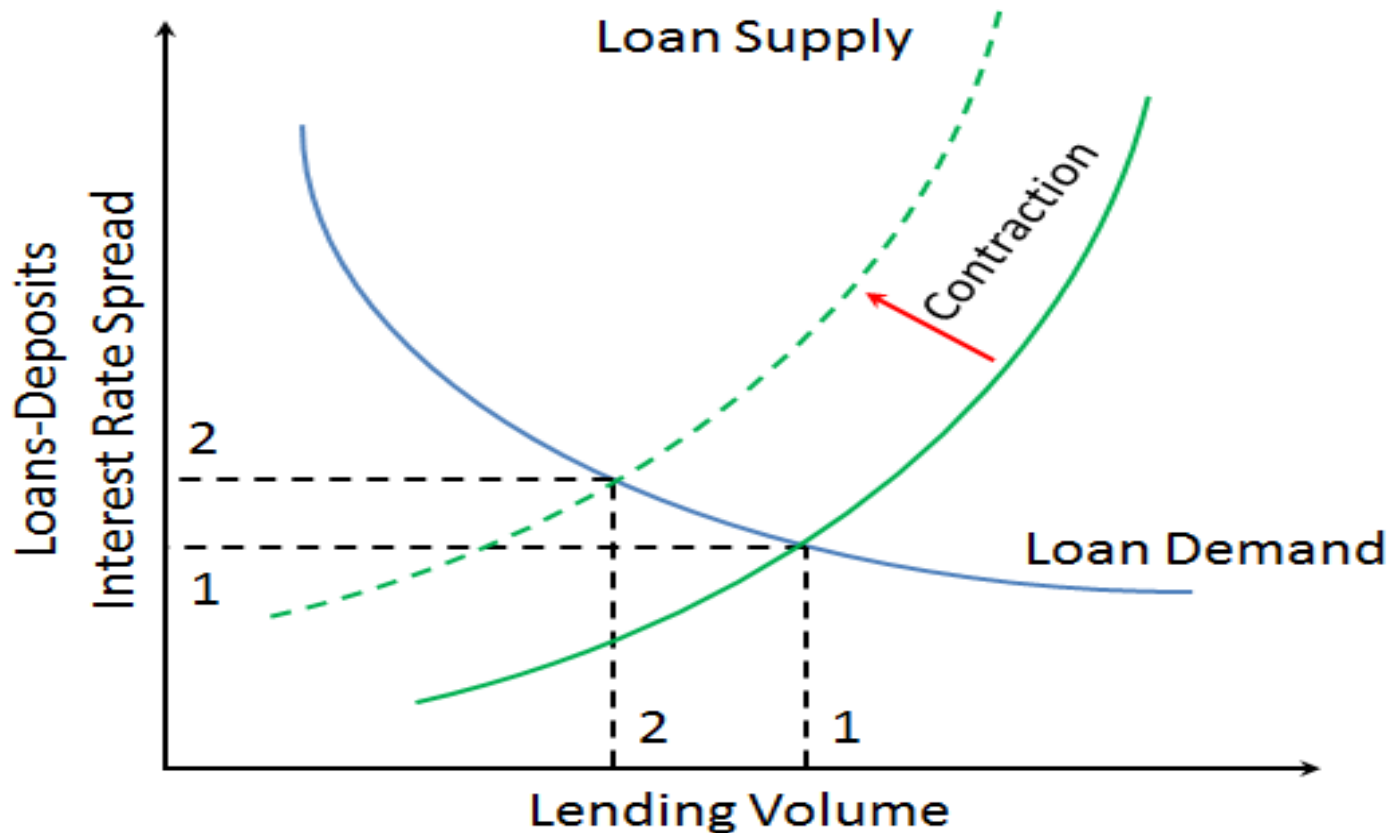
The macro-financial dimension of the non-performing phenomenon: impact on cycles



Source: Adaption after the work of FSC's Subgroup on non-performing loans

The macro-financial dimension of the non-performing phenomenon: theoretical aspects (I)

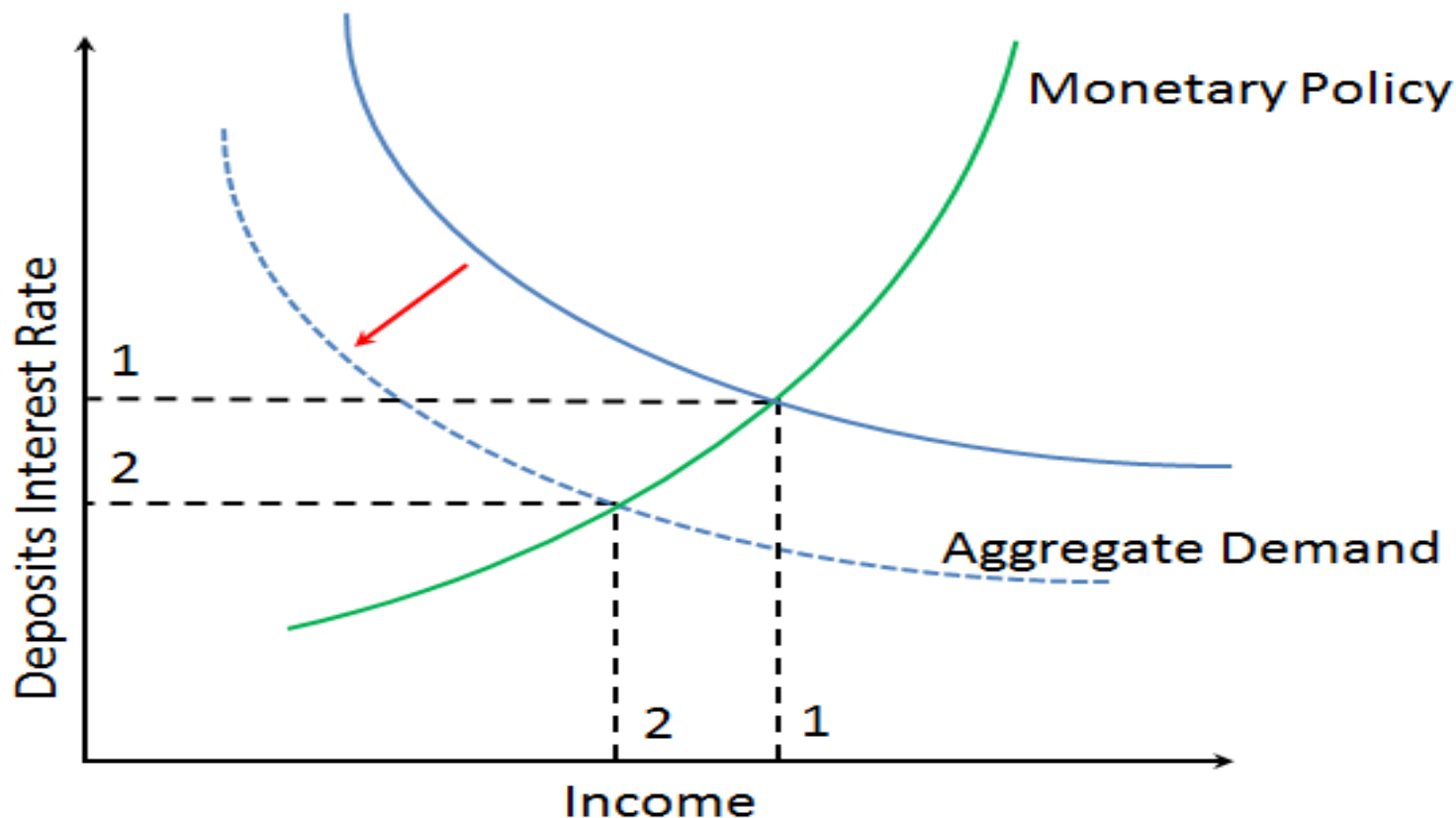
- A default shock causes a contraction in loan supply owing to banks' decision to deleverage



Source: Bernanke and Blinder (1989), Woodford (2010)

The macro-financial dimension of the non-performing phenomenon: theoretical aspects (II)

- ...and further, the rise in the interest rate spread results in a contraction of aggregate demand

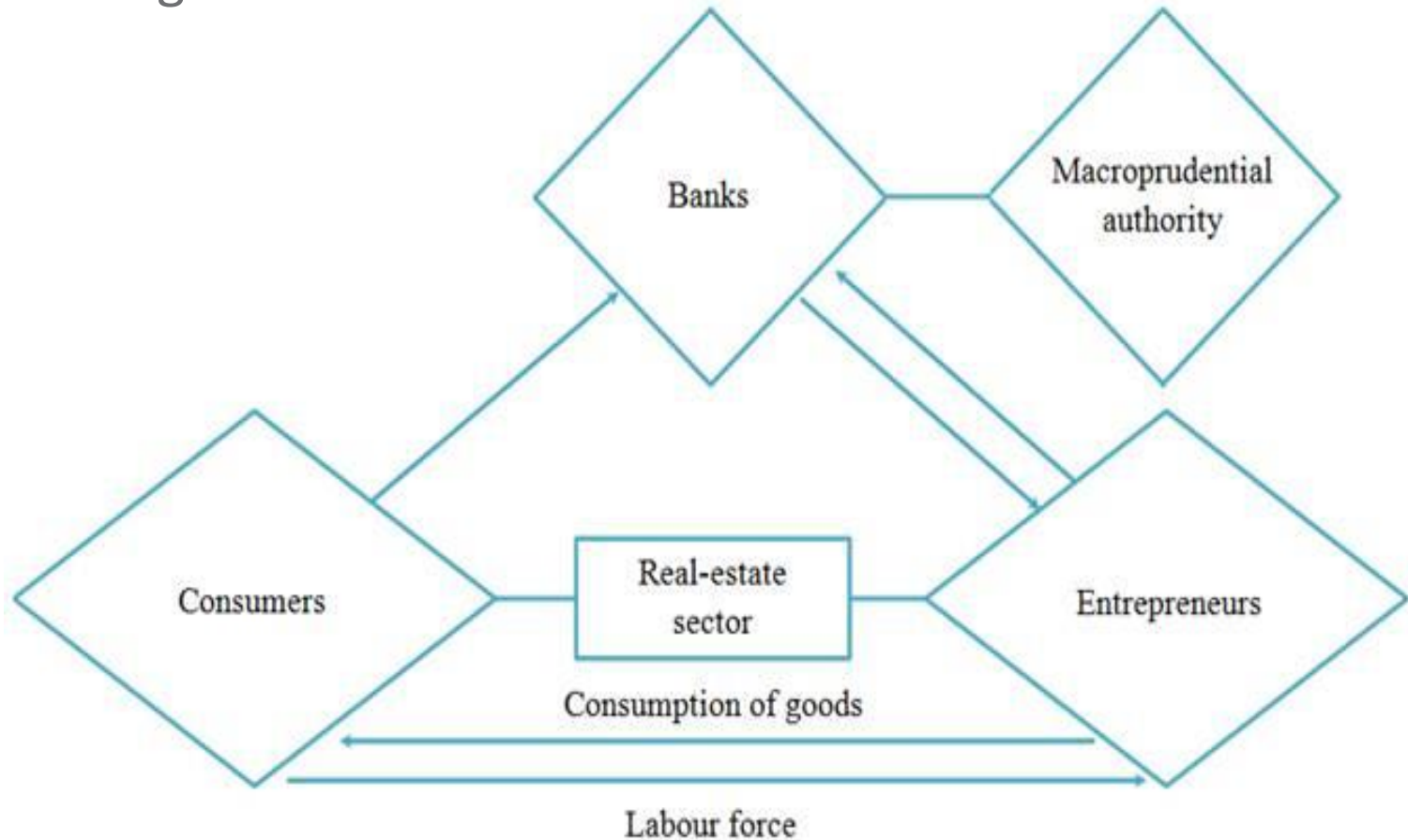


Source: Bernanke and Blinder (1989), Woodford (2010)

Investigation of NPL spillovers

Investigation of NPL spillovers: methodology (I)

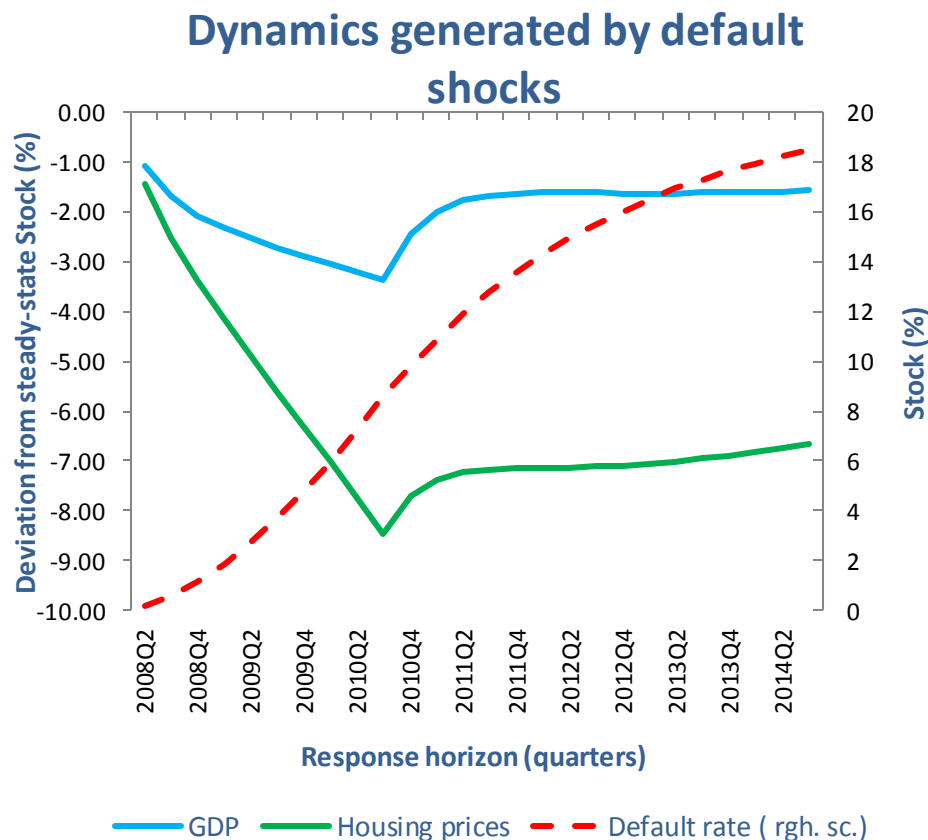
- Use of a DSGE model with the following building-blocks and interlinkages:



Investigation of NPL spillovers: methodology (II)

- A model of financial business cycles has been used – inspired mainly by the works of Bernanke and Gertler (1989) and Iacoviello (2013)
- The model was extended to allow for external habits in consumption and by defining a heteroskedastic variance of shocks (second order approximation is used for this feature)
- Defaults come due to an exogenously defined repayment or redistribution shock (the model is calibrated)
- Macroprudential authority sets limits on LTV (demand side) and required capital ratio (supply side)

Investigation of NPL spillovers: simulation (I)

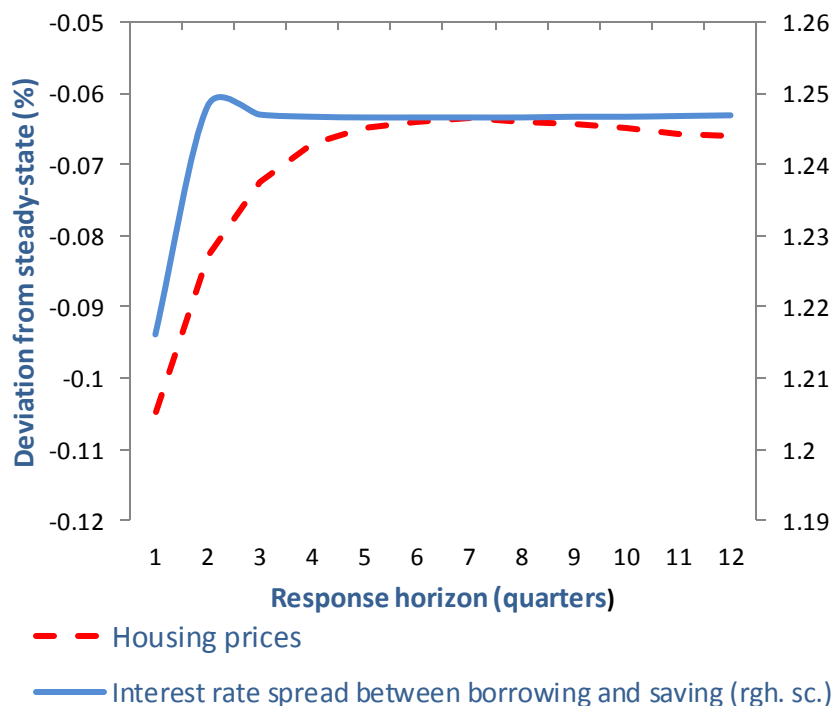


- To investigate the effects of default shocks on Romanian financial business cycle, a counterfactual simulation experiment was conducted
- ... for this purpose, a dynamic simulation approach has been implemented, using a feed with a series of default shocks (calibrated on the base of empirical outstanding of NPLs) for the 2008Q2 – 2010Q4 period

Source: own calculations

Investigation of NPL spillovers: simulation (II)

Impulse response functions (annualized) to a shock on the variance of defaults



➤ Effects on financial business cycle due to a shock in the variance of default rate have been also investigated

➤ Results showed that:

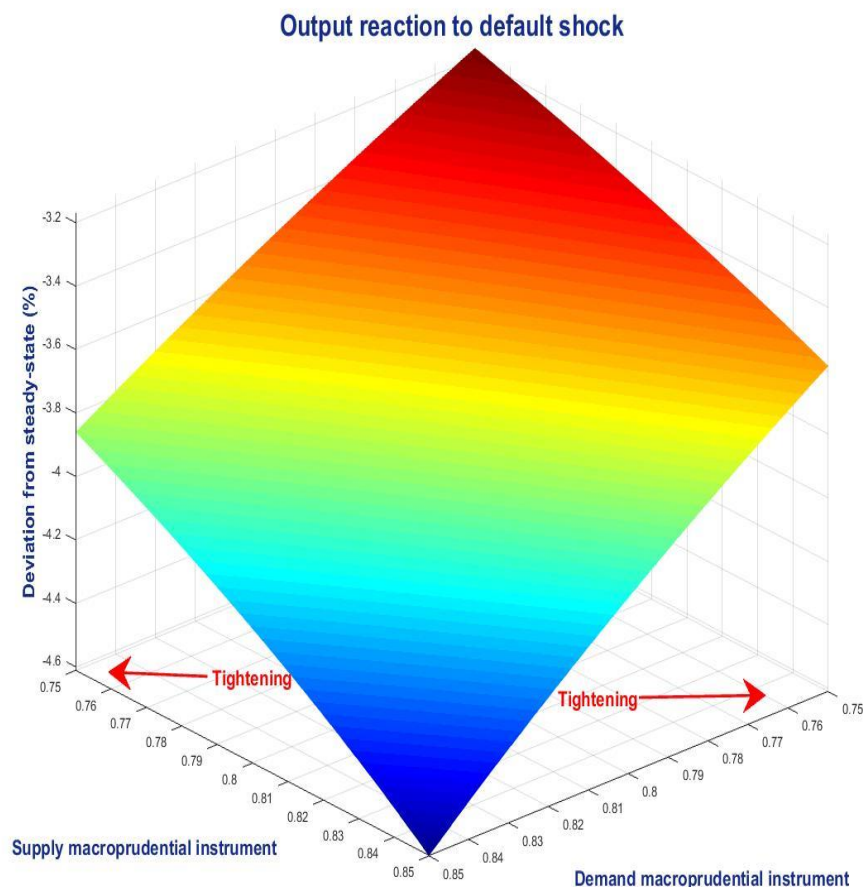
❑ the post-shock dynamics of the macro-financial variables are in line with their empirical patterns

❑ NPLs represent an important driver of the financial business cycle

❑ defaults' variance also produces effects

Source: own calculations

Investigation of NPL spillovers: simulation (III)



Source: own calculations

- NPLs and macroprudential policy:
- ❑ defaults are exogenously driven in the model, thus no capacity to hedge against them – in line with empirics which underline that defaults are mainly due to macro facts
- ❑ ...tightness in demand credit limit is more efficient in reducing the damages produced by non-performing phenomenon for the real economic activity – in terms of output reduction from its steady - state
- ❑ use of an appropriate mix of macroprudential instruments is desirable

Conclusions

- The non-performing phenomenon represents an important driver of financial business cycle
- Sharp contractions of Romanian GDP and housing prices in the aftermath of the financial crisis are connected with increases in non-performing loans
- An adequate mix of macroprudential policies should be used to address financial imbalances
- *Is leaning against the wind* a feasible macroprudential solution compared to discretionary policies such as *benign neglect* or *late-in-the-cycle*?



Thank you for
your attention!