NBRM 3rd research conference

Session IV: Measuring and Assessing Financial Stability Comments

Goran Petrevski
Saints Cyril and Methodius University, Skopje, Macedonia
A Comment on
“Early warning models for systemic banking crises in Montenegro”
Methodology

• An early warning model for a banking crisis in Montenegro during 2005-2012.

• Logit-regression.

• Bayesian model averaging technique based on seven simple logit-regressions, each one containing two explanatory variables.
Main findings

- The model provides correct signals for the banking crisis a year or two in advance. Hence, it is truly an early warning model.

- Indicators related to credit expansion have a dominant role in signaling the occurrence of a systemic banking crisis in Montenegro.

- Indeed, a huge credit expansion in Montenegro during the pre-crisis period, followed by contraction of economic activity and in lending.
Some qualifications

• How to define a banking crisis?
• The crisis hasn’t ended, yet.
• Only one banking crisis in Montenegro, i.e. a single crisis episode.
• The Global crisis.
• The problem of monthly data: transitory and/or seasonal effects (too much noise).
• Some omitted or redundant variables: EU output, capital flows; house prices; Euribor, inflation.
• Capitalisation – the effect of cyclical data.
How interpret early warning models?

• Cyclical movements or banking crisis?

• The intensity of signaling: strong signals followed by weak ones (Figure 1).

• Identify a few main indicators as an input to “what-if” scenarios or simulation.
Graph 1: The forecasted probability of systemic banking crisis

Source: Author’s calculations in EViews 6
A comment on
“Measuring financial stability – systemic risk accumulation and materialization vs. financial system resilience”
Methodology

• Principal component analysis, 2002-2013

• Three composite indices of financial stability:
  – systemic risk accumulation index
  – systemic risk materialisation index
  – financial system resilience index

• Various risk indicators
Main findings

• Risk accumulation driven by asset prices, credit growth, indebtedness, euroisation etc.

• Risk materialisation is reflected by NPLs, unemployment, exchange rate, interest rate spreads, risk premium of foreign mother-banks etc.

• Financial system resilience reflected in capitalisation and capital adequacy of the banking sector, stability of funding, FX liquidity, bank profitability, international reserves.
Some remarks

- Few vs. more indicators in the index
- High vs. low frequency data
- Cyclical movements or banking crisis?
- Hence, how to define excessive credit growth?
- Alternative indicators:
  - credit growth/GDP growth
  - house prices/rent ratio
  - house prices/personal disposable income ratio
  - loan/deposit ratio
  - bank leverage
  - indicators measuring the borrowers’ ability to pay
• Risk accumulation index
  – Early strong signals followed by weak signals
  – Accumulated or additional risks?

• Risk materialisation index - a “too-late” index? (Figure 4)

“Risk materialisation indicators represent a signal to policy makers and confirm that measures should be taken and instruments used to mitigate vulnerabilities. From the central bank perspective, this type of indicators can be used as a signal for loosening previously used measures and instruments of macroprudential policy (pp.20-21).”
Figure 2. Systemic risk accumulation index

Source: Author’s calculations
Figure 4. Systemic risk materialisation index

Source: Author’s calculations
• Financial system resilience index as a signaling tool (Figures 5 and 6)
  • Capital adequacy
  • Retail deposit-to-loan ratio