Discussion of Confidence Cycles and Liquidity Hoarding by Volha Audzei (2016)

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[1] The views expressed are solely my own and do not necessarily reflect those of the Central Bank of Cyprus or the Eurosystem.

Outline

Motivation

- Recent euro area financial crisis
- Interconnectedness between financial and real sector
- Market imperfections and the limited rationality of economic agents
- As shown in the paper, factors that resulted in tightening of banks's lending standards based on the Bank Lending Survey
  - General economic conditions
  - Liquidity position
  - Ability to access market financing
  - Risk on the collateral constraint

Question

- Banks overly pessimistic or just rationally predicting the downturn?
- Based on studies on the Survey of Professional Forecasters there is evidence of sluggishness in forecasters' expectations
- Therefore, following an episode of low returns or high risk, forecasters underestimate returns of overestimate risks in the next period
- This paper:
  - interpreters the above sluggishness as evidence that agents form their forecasts based on backward-looking data
  - addresses imperfect information about general economic activity and counterparty risk in a DSGE model
  - focuses on the role of counterparty risk as a source of interbank market collapse (and not due to liquidity shortage)

Model structure and related literature

- DSGE model for analyzing:
  - the role of expectational shocks and their propagation to the real economy
  - the efficiency of the policy measures applied during the economic downturn
- Related literature:
  - Role of financial sector and credit in the economy (i.e. Gertler and Karadi (2011), Curdia and Woodford (2011), Del Negro et al. (2011), Kiyotaki and Moore (2008) and Gertler and Kiyotaki (2010))
  - Interbank market structure (i.e. Gale and Yorulmazer (2013), Heider et al. (2009), Allen et al. (2009), Bianchi and Bigio (2014) and Hilberg and Hollmayr (2011))
  - Market expectations and uncertainty (i.e. Fuhrer (2011), Beaudry et al. (2011), Beber et al. (2013), Bloom (2009), Acemoglu et al. (2006), Pfajfar (2013), Lorenzoni (2009) and Hommes (2011))

Selected Features

- Story:
  - Banks lend to the real economy depending on their heterogeneous return expectations
  - Decline in the return expectations increases their evaluation of counterparty risk in the interbank market
  - When lenders expect a low return on a risky asset, they assign a high probability to the scenario of their borrowers not being able to honor their debt
  - These expectations can drive the interbank market rate to a level where no bank is willing to borrow
  - Without access to the interbank market, banks reduce their lending to the real economy and hoard their funds in reserves
- Central bank policies:
  - Untargeted liquidity provisions to all banks
  - Targeted liquidity provision to support lending to the real sector
  - Policy rate cut
  - Relaxation of the collateral constraints on the interbank market

Selected Results

- Following large negative shocks to returns, banks underestimate future returns, reduce interbank lending and increase hoarding which results in lower credit to the economy and amblification of the recession
- Sentiment shocks are able to generate a recession by reducing the supply of credit and interbank market lending
- Therefore, investors' expectations and their uncertainty instigate large swings in the real economy
- Liquidity provision can help restore credit to the real economy, although its effect is limited by banks' pessimism
- Significant share of funds received from the central bank is invested in safe assets (reserves) instead of flowing into the real economy
- Reduction in the policy rate (reserve rate) results in a worse outcome than the scenario with no policy response, since the low return on reserves, erodes banks' revenues, resulting in a smaller supply of credit and a subsequent fall in capital accummulation

Topic 1: Euro area financial crisis

- Synopsis of the various phases of the euro area financial crisis (see Darracq Paries, Jacquinot and Papadopoulou (2016))
  - Macroeconomic spillovers of sovereign market tensions through risky banks
  - Adverse real-financial feedback loop from rising corporate default to weak banks and credit crunch supply constraints
  - Bank deleveraging process at times of unprecedented regulatory overhaul (banks frontloaded from mid-2011 to end-2014 a tightening of capital requirements related to BASEL III reform)
- This paper concentrates on the second salient feature by focusing on counterparty risk (other DSGEs approach this via increase in corporate risk in entrepreneurs' agency problem (financial accelerator))
- Nevertheless, ad hoc questions on the euro area bank lending survey suggest that stressed countries faced the regulatory and supervisory pressures by cutting on credit origination. In non-stressed countries the bulk of the adjustment came from capital increases.

Topic 2: Are banks intermediaries of loanable funds?

- Traditional view: Banks are intermediaries of loanable funds, therefore bank loans represent the intermediation of real saving i.e. lending out the deposits thats savers place with them
- Real world: Banks are the creators of deposits i.e. banks first decide how much to lend depending on the profitable lending opportunities available to them, and then adjust deposits (see Zoltan and Kumhof (2015))
- This paper assumes that lending is closely interlinked with the interbank market. A closer look though should be done on the dynamics of deposits.
- Recommendation: How deposits react to counterparty risk and how are they decided in this DSGE model?

Topic 3: Liquidity risk

- Assumption: This paper focuses on the role of counterparty risk as a source of interbank market collapse and not due to liquidity shortage.
- There is no liquidity risk in the model

Topic 4: Standard monetary policy

- Activist view: In addition to price stability, an equally important goal of monetary policy is to guide the economy towards attainment of its ideal "potential" level of activity.
  - Need of accurate measurements of the level of potential output to measure the output gap
  - potential output is notoriously difficult to construct in real time
  - without reliable estimates the activist approaches can run into problems
- Stability-oriented approach: The attempt to dampen economic fluctuations by promoting stable economic growth over time, subject to a primary focus on maintaining price stability.
- Therefore, the stability-oriented view (monetary policy is specified in terms of output growth instead of output gap) more closely describes the monetary policy strategy of the ECB than the activist view
- Recommendation: Incorporate the stability-oriented approach

Topic 5: Banker's agency problem

- Gerlter and Karadi: Bankers' can divert a fraction of their assets and transfer them without costs to the households. In this case, depositors force the default of the intermediary
- Assumption: Applied on the average level
- Interbank positions from the lending or the borrowing bank in the interbank market are not diverted to the households

Application 1: Public Sector Purchase Programme

- Non-standard monetary policy can be operationalised via direct purchases of government bonds by the monetary authority from banks and households
- In such a case, the model need to be expanded to allow for government bond holdings by households and banks
- For the design and announcement strategy of PSPP, need to assume the purchases evolution according to the PSPP portfolio holdings as a percent of GDP (see Darracq Paries and Kuehl (2016))
- The following stochastic process can then be used

$$B_{CB,t} = \rho_{B1} B_{CB,t-1} + \gamma_0 \varepsilon_{CB,t} + \gamma_1 \varepsilon_{CB,t-1} + \gamma_2 \varepsilon_{CB,t-2} + ... + \gamma_n \varepsilon_{CB,t-n}$$

  - $\varepsilon_{CB,t-i}$ from $i = 0, ..., n$ represents the evolution of purchases which are carried out in the build-up phase and are assumed to be known in period $t - n$
  - once all purchases are carried out and $B_{CB,t}$ reaches its peak, they start decaying following an AR(1) process
  - ρ_{B1} is calibrated to match the redemption schedule of a 10-year bond in the PSPP programme.

Application 2: Effective lower bound on interest rates

- Non-standard measures are usually introduced as an additional policy tool when the short-term interest rate has reached its effective lower bound (ELB) and thus the room for further easing of the monetary stance through standard measures has been exhausted.
- Therefore, they were implemented in an environment where the short-term interest rates are constrained by their effective lower bound.
- The central bank interest rate policy should be specified accordingly implying that the length of the lower bound period becomes endogenous.
- Such a constraint brings some non-linearity into the model and makes the macroeconomic multipliers of central bank asset purchases quite sensitive to the underlying crisis scenario.
- Effective lower bound on interest rates can be introduced in the model with:
  - an occasionally binding constraint with endogenous exit, or
  - an expected or unexpected constant interest rate policy (for a pre-specified number of periods).

Application 3: Macroprudential policies

- Capital-based macroprudential policies measures target bank's capital and provisioning requirements to increase the overall resilience of individual banks and the banking sector by mitigating the build-up of risk exposures.
- In this model, capital-based macroprudential policies could be performed by allowing the supervisory authority to steer the regulatory capital requirement ratio.
- Therefore, an additional constraint can be included where banks must hold a certain fraction of risky weighted assets as capital.