

PROCEEDINGS OF THE ADEMU WORKSHOP:

MACROECONOMIC AND FINANCIAL IMBALANCES AND SPILLOVERS

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May 20, 2016

Abstract

On 29 and 30 April 2016 the CERGE-EI (Center for Economic Research and Graduate Education - Economics Institute) in Prague hosted the Work Package 3 Workshop for the ADEMU (A Dynamic Economic and Monetary Union) Project, part of the Horizon 2020 work program topic "Resilient and Sustainable Economic and Monetary Union in Europe". The research in Work Package 3 focuses on spillovers effects between member states and on the role of international imbalances in macroeconomic and financial variables.

Introduction

Conference "Macroeconomic and Financial Imbalances and Spillovers", organized by Radim Boháček (CERGE-EI) and Hugo Rodriguez Mendizabal (Barcelona GSE), was held on 29th and 30th of April at CERGE-EI in Prague. The conference concerned the Work Package 3 of the ADEMU (A Dynamic Economic and Monetary Union) project. The research in Work Package 3 of the ADEMU project focuses on spillover effects between member states that are caused by shocks to fiscal and financial variables and on the role of international imbalances in macroeconomic and financial variables due to asymmetric patterns of economic interdependence within the euro area and between the EU states. The main subject of the workshop is the extent to which these effects and imbalances have contributed to recent macroeconomic instability and the potential role of macro-prudential regulation.

The workshop, chaired by Rene Levinsky (CERGE-EI) and Radim Boháček (CERGE-EI), consisted from five talks each day, one data collection presentation and was enclosed by the panel discussion chaired by Ramon Marimon (EUI). All the talks addressed the main subject of the workshop, whereas data collection presentation and panel discussion laid the foundations for the future work, which should be done in order to successfully fulfil the work package's goals. In the following, we present short overviews of all talks.

Sessions

2.1 The Real Effects of Liquidity Shocks in Sovereign Debt Markets: Evidence from Italy - Alejandro Vicondoa (EUI)

Alejandro Vicondoa presented the joint research in Gazzani and Vicondoa (2016) on macroeconomic effects of the liquidity shocks in secondary sovereign debt markets. Sovereign debt markets have been important research topic among economists after the European Sovereign Debt Crisis. Despite the growing number of theoretical models that analyze changes in liquidity in these markets, there was no empirical evidence on their real effects. Authors provide the first empirical evidence on the macroeconomic effects of changes in liquidity in secondary sovereign debt markets.

Using monthly the data for Italy from 2004 to 2014, they find that liquidity is a major financial driver of the economic activity. In particular, a shock to Bid-Ask Spread (common measure of liquidity) causes a strong (15 % of the Forecast Error Variance) and persistent (10

months) effect on unemployment and indicators of confidence. The channel transmitting the liquidity shocks to the real economy is the lending behavior of banks.

In the discussion, Peter Hansen (EUI) asked about the potential issues caused by the relatively big number of variables compared to the length of the time-series used. Alejandro Vicondoa answered that this is not a major concern for their results, as they use big variety of different specifications, which show that their results are robust.

2.2 Bank Opacity and Financial Crises - Joachim Jungherr (CSIC and BGSE)

Joachim Jungherr presented his working paper on endogenous bank opacity and financial crisis. Bank opacity can represent costs from the point of the society because it can reduce market discipline and cause banks to take excessive risk. Banks choose to be opaque to gain advantage over other banks. If the information on the bank balance sheets is proprietary, and banks choose to be opaque, investors can not clearly distinguish between risky and safe banks. This kind of behavior reduces the overall transparency and leads to increased risk of the bank-runs.

Consequences of the two policies are analyzed. First, optimal public disclosure can make banks more vulnerable to a run for a particular investment policy, but they reduce the risk of a bank-run because they improve the overall market discipline. Jungherr pointed out that some level of opacity may be beneficial because it provides a risk sharing mechanism between banks, so called Hirshleifer effect. Second, public stress tests are beneficial if the policy maker has access to public information only. Public stress tests can be harmful if the policy maker has access to banks' private information, as they can reveal excessive amount of information to the public.

2.3 Bank size, risk diversification and money markets - Hugo Rodriguez Mendizabal (CSIC and BGSE)

The author presented his research which develops a theoretical model to explain the observed feature in the money markets in which small banks are net providers, while large banks are net purchasers of funds. In contrast to the existing literature on the topic, the model incorporates the liquidity provision by the central bank. Furthermore, in the model, small banks differ from the large ones by the fact that they are less diversified, more risky, have smaller leverage and they borrow in the wholesale money market with larger risk premium. Following the feature that payment needs are random and because smaller banks face less favorable rates in the interbank market, they will in equilibrium receive extra funds for precautionary reasons from the central bank. Consequently, they will offer these funds in the money market.

As pointed out by the author, the pursuing the answer to the original research question, a lot of interesting questions about the nature of the financial markets emerge. In particular, development of the model has tried to replicate the actual institutions present in the monetary system. For example; broad money (deposits) are created by the commercial banks and used by the real sector to finance their activities, narrow money which is created by the central bank is used by commercial banks for net payments derived from the creation of broad money and interbank market operations.

During the discussion, the model assumption about endogenous broad money creation and the limit to the money creation (as opposed to, for example, money multiplier) was discussed between Radim Boháček (CERGE), Juan Pablo Nicolini (Federal Reserve Bank of Minneapolis) and the author. Author presented that the view is shared by some "orthodox" academicians, central bankers and market participants. He also argued that the banks face following constraints in money creation: capital requirements, loan demand and monetary policy.

2.4 Monetary-Fiscal Interactions with Endogenous Liquidity Frictions - Wei Cui (UCL)

Wei Cui presented his joint work with Sorren Radde, which focuses on dynamic general equilibrium models with search frictions on asset markets, with endogenous asset liquidity and financing constraint. Specifically, in order to study the feedback effects between asset liquidity and the real economy they present a tractable macroeconomic model with endogenous asset liquidity. This allows to address important empirical evidence, which shows that asset market liquidity deteriorates during economic downturns and adversely affects macroeconomic dynamics by limiting funds for constrained firms and at the same time it promotes demand for liquid assets, such as money or government bonds. These amplifying effects on recessionary dynamics were also highlighted during the recent financial crisis in 2007-2009.

In the model the fluctuations of the asset liquidity are driven by shocks that affect asset demand and supply on the search market. In particular, they either directly influence search market through intermediation cost shocks or indirectly by productivity shocks. However in both cases they cause tightening entrepreneurs' financing constraint and thus transferring into real activities. Moreover, illiquidity of private financial claims emphasize importance for liquid assets such as fiat money, which can be used for hedging against asset market illiquidity and associated financing constraints. Therefore, privately-issued assets thus carry a liquidity premium.

The authors manifest that endogenous liquidity is essential to generate positive co-movement of asset saleability and asset prices, what is their key contribution. Consequently, this allows to capture the amplifying effect of asset market liquidity variation on business cycle fluctuations and to replicate flight-to-liquidity dynamics, matching U.S. business cycle features. This framework also provide insights for government interventions. Asset purchase programs can help to ease liquidity frictions and thus they can have real effects. At the same time, in an endoge-

nous liquidity framework, government demand can squeeze private demand through congestion externalities.

2.5 Why Prices Don't Respond Sooner to a Prospective Sovereign Debt Crisis - Anton R. Braun (FED of Atlanta)

The author in his research investigate the effects of increased costs of short-selling sovereign debt, which where implemented in Europe since 2008. In order to do so, they first provide a novel explanation for the empirical observation that the biggest movements in bond yields occur shortly before the default event. This observation is puzzling, because bond prices are given by beliefs of participants about the future payoffs and thus bond prices should react strongly on news indicating increasing risk of a sovereign debt crisis. However, empirical observations suggests that bond prices are lagging in comparison with other indicators. The explanation provided by the A. Braun does not assume informational asymmetries as the previous explanations and instead depends on a particular type of financial friction.

Specifically, they show that recently taken measures by governments, which have increased the cost of short-selling are adversely affecting a basic price-revelation mechanism associated with forward looking behavior. In frictionless financial markets, prices drop immediately as response to bad news even when crisis seems to be distant. Imposing the costs on short-selling has subtle effect on timing and magnitude of price responses to bad news in periods before the sovereign default. Government bonds are not responding to bad news and price declines only right before a sovereign default and afterwards in a nonlinear way.

In the sense of the model, government can want to increase costs of short-selling their debt in order to reduce downward price pressure on government debt in short-run. However, this

short-run gain, on the other hand can cause that price movements are larger and more sudden. Moreover, increased costs of short-selling are decreasing the fraction of agents that go bankrupt, because they decrease participation in government bond markets.

2.6 Deleveraging, Deflation and Depreciation in the Euro Area - Dmitry Kuvshinov (University of Bonn)

Dmitry Kuvshinov presented the joint research by Kuvshinov, Muller and Wolf (2015) on the effects of the deleveraging shock to a country in a currency union. The research is motivated by the observation of a different economic performance in various countries in the euro area. While some countries saw their economies recover quickly after the 2009 collapse, other countries are experiencing the continuing economic decline and deleveraging process. At the same time, intra-euro-area exchange rates have not changed significantly. Examining a two-country model of currency union, they find that the deleveraging in one country generates deflationary spillovers which might not be contained by monetary policy (if it is constrained by a zero lower bound). Consequently, there is no real-exchange rate response, and the output collapse, concentrated in the deleveraging economies, follows.

The exact results depend on the relative size of the economy compared to the whole currency union and the wage flexibility. In the case of a small economy, deleveraging shock is not propagated to other countries. When the shock hits the relatively large economy, there are deflationary spillovers to the rest of the currency union, which is not contained by the real exchange rate response if the zero lower bound binds. Authors also find paradox of flexibility in their model, which implies that the wage flexibility can be destabilizing by causing stronger real appreciation. This can also be relevant for the ongoing policy debate in the euro area.

2.7 Policy Spillovers and Synergies in a Monetary Union - Oscar Arce (Banco de España)

Oscar Arce (BE) presented the Arce, Hurtado and Thomas (2015) where authors create a general equilibrium model of asymmetric monetary union which faces a liquidity trap and slow deleveraging process in its "periphery". They analyze the effects of different policies and the potential synergies of their joint implementation. The examined policies are pro-competition structural reforms in the periphery, a fiscal expansion in the "core", and forward guidance about the future path of the nominal interest rate. The choice of these policies was motivated by the current situation in the European Monetary Union, and the debate on the appropriate policies.

Regarding spillovers, authors find that the effects of national policies on the other countries in the monetary union crucially depend whether or not the monetary policy is constrained by the zero lower bound. Consequently, if monetary authority can not accommodate a deflationary pressure, structural reforms in the periphery can produce small contractionary effects in the core. On the other hand, fiscal expansion in the core can benefit the periphery if the zero lower bound binds. Authors find that the joint implementation of the pro-competition structural reforms in the periphery, fiscal expansion in the core, and forward guidance about the future path of nominal interest rates produces potentially sizable short-run positive synergies between the three policies.

2.8 Volatility During the Financial Crisis Through the Lens of High Frequency Data: A Realized GARCH Approach - Peter Hansen (EUI)

Peter Hansen presented study investigating financial volatility during the global financial crisis, specifically sample spans the period from January 3rd, 1997 to December 31, 2009 during which several major financial events took place. The largest shocks to volatility are used to identify the major events during the crisis. Moreover, extensive usage of high-frequency financial data to model volatility allows to identify the within day occurrence timing of the largest volatility shocks. At the same time it helps to determine causes of these volatility movements, what provide substantial advocacy for usage of high-frequency data.

For a volatility analyzes authors use also the new variant of the Realized GARCH model, which is adapted to be more robust to outliers, what is also the main econometric contribution. The new variant of the Realized GARCH model improves the empirical fit, determined by log-likelihood function, but rigorous comparison is difficult because the outliers are rare.

The identified day with the largest volatility shock was February 27, 2007 when Freddie Mac announced tighter standards and also when the Chinese stock market crashed. However, intraday data inspection provide a perfect match between the volatility shock and the occurrence of a computer glitch in the trading system, just before 3pm. Thus, intra-day data analysis preserves from overestimating the impact of Freddie Mac announcement and the Chinese stock market.

2.9 Collection of Worldwide used Imbalances Indicators for the EU countries - Ivo Bakota & Vladimír Novák (CERGE-EI)

The data collection presentation first summarized and highlighted similarities and differences between all imbalances indicators used by following institutions/procedures and papers: Macroeconomic Imbalances Procedure (European Commission), Aikman et al. (2015), IMF: Global Stability Map, Office of Financial Research, European Systemic Risk Board, Bank of England and by the Reserve Bank of New Zealand.

Ivo Bakota consequently introduced which of these indicators were successfully collected for the EU countries and what is the organization of the database with these data, which was created specifically for the purposes of the ADEMU. This database has several advantages, for instance, it provides all indicators from various sources in one place what makes their comparison easier. Also, it provides historical data and the EU equivalent data for the non-EU indicators, which are available. Talk finished with discussion about what other indicators should be collected and how to proceed in the future. It was agreed that the database should be made available soon on the ADEMU website.

2.10 Asymmetric Trade Liberalizations and Current Account Dynamics - Alessandro Barattieri (Collegio Carlo Alberto)

Alessandro Barattieri presented a working paper in which he proposes asymmetries in the timing of trade liberalizations as a new mechanism influencing the current account dynamics. In

order to do so, he first proposes a simple two-period model to build intuition. Afterwards, he uses an international business cycle model to indicate how the asymmetric trade liberalization in manufacturing and service trade is important for explanation of the German surplus dynamics from 2000-2007.

Theoretical part is followed by broad empirical evidence done on the samples of OECD, BRICS and developing countries; which supports the main predictions of the theoretical model. The first policy implications arising from the ongoing work suggests that further liberalization of trade in services can help countries such as Greece, Spain, Portugal and the UK in their rebalancing process without need to rely only on austerity measures. However, more deeper research is needed on this topic.

2.11 Sovereign Default: The Role of Expectations - Juan Pablo Nicolini (FED of Minneapolis)

Juan Pablo Nicolini presented his joined research with J. Ayres, G. Navarro and P. Teles, in which they investigate the role of expectations in sovereign debt crises. The key point of their research is that both fundamentals and expectations can play essential roles. High interest rates can lead to high default probabilities and thus defend high interest rates, whereas self-confirming expectation equilibria arise when debt levels are relatively high.

Theoretical models are motivated mainly by two episodes of sovereign debt crises. First is the crisis of 1998-2002 in Argentina and second is the European sovereign debt crises, which begun in 2010. Building on the models of Aguiar and Gopinath (2006) and Arellano (2008), by implementing minor changes in timing assumptions and actions of agents can instead of a single equilibria generate high and low interest rate equilibrium. This is important investigation, because these assumptions cannot be obtained directly from the empirical evidence, but

only from indirect evidence. The multiplicity of equilibria seems to be consistent with large movements in interest rates observed during sovereign debt crises.

Finally the authors use the model for discussing lending policies similar to those announced by the ECB in 2012, with the conclusion that those policies, could have the effect of cutting down sovereign debt spreads.

Chapter 3

Discussion

The ending event was the discussion concerning the WP3, chaired by Prof. Ramon Marimon (EUI).

Prof. Marimon pointed out at the trade-offs between stability and economic growth, quoted the Paolo Pasimeni that europe faces: "...growth with imbalances, or balance without growth." Discussing the MIP and its effectiveness, Prof. Marimon said that it is not clear how credible is the threat to impose penalties on the countries which do repeatedly fail to take agreed action or to deliver a sufficient "corrective action plan" concerning the imbalances.

Ramon Marimon (EUI) and Oscar Arce (Banco de España) discussed how institutions which evaluate economic programs of political parties running for parliament (such as Netherlands' Bureau for Economic Policy Analysis) can contribute to the implementation of economic policies which are more sound in the long-term. They proceeded to note there was an attempt to create such institution in Spain, but it was not nearly as influential as in the Netherlands. They concluded that public's view of credibility and importance of such institutions can be troublesome to achieve.

Oscar Arce pointed out that procedures like MIP, even if lacking credible threat of imposing sanctions, have an effect on policy making, as it creates peer pressure to policy makers. Nevertheless, he warns that the peer pressure alone can not be sufficient mechanism for achieving stability goals. He points out that the importance of Fiscal councils, which are emerging in the past years in different EU members, in realizing sound fiscal policies. He also argued that the regulatory mechanisms should also put emphasis on monetary, not just fiscal policies.

Radim Boháček (CERGE-EI) suggested to evaluate the efficiency of the current MIP indicators and mechanisms, now that the relevant data are readily available.

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