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## Monetary, financial and fiscal fragility in 2020s

Makram El-Shagi<sup>1</sup> and Camélia Turcu<sup>2</sup>

### Abstract

This special issue contains a selection of articles which were presented at the 5<sup>th</sup> HenU/INFER Workshop on Applied Macroeconomics (Henan School of Economics, 2019). These theoretical and empirical contributions provide new insights into the analysis of monetary, financial and fiscal fragility in 2020s, in the globalized world, insisting on the role of the economic policy. They will certainly help to improve our understanding of these topics.

Keywords: fiscal fragility, financial integration, crisis, monetary policy

JEL Codes: E3, E4, E5, E6, F3, F4, G1

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## Monetary, financial and fiscal fragility in 2020s

The Global Financial Crisis, the debt crisis in the Euro area have brought countries' monetary and fiscal vulnerabilities to the forefront of the academic debate. The crises added to the debt burdens and made the fiscal vulnerabilities more substantial. In their inability to stop the crises with purely fiscal measures, most countries resorted to extraordinarily expansionary monetary policy to provide further stimulus. Both the Federal Reserve Bank and the ECB lowered their rates to the zero lower bound where they had to resort to unconventional monetary policy to further alleviate the economic situation. This did not only bring the major central banks of the globe into uncharted waters regarding monetary policy, but also drastically increased the government debt held by those banks, thereby increasing the linkages between monetary and fiscal issues. While the initial hope was to overcome the crisis in a few years, it now seems that it will take a good part of the 2020s to overcome the problems. Hence, more than a decade after the outbreak of the Global Financial Crisis the economic problems are still far from being solved. This puts forward key policy objectives, requires new instruments and might impose new trade-offs in a world in which economies are becoming more interdependent.

The papers included in this special issue provide new insights into the analysis of monetary and fiscal fragility in 2020s, in the globalized world, insisting on the role of the economic policy. They were selected following the 5<sup>th</sup> HenU/INFER Workshop on Applied Macroeconomics (Henan School of Economics, March 2019) jointly organized by the Center for Financial Development and Stability at HenU (Henan University), and INFER (International Network For Economic Research)<sup>1</sup>. Their presentation is structured in four sections. Section 1 gathers the keynote lectures we had the privilege to welcome at the workshop. Section 2 is dedicated to the recent economic and financial crisis analysis and their impact on countries banking sector, financial stability and monetary policy. Section 3 extends the first one and studies monetary and fiscal policies spillovers at international level. Section 4 gathers contributions on fiscal policy in particular and its fragility in the recent times, while Section 5 discusses the role of current account and macroeconomic stability in general.

### 1. Keynote lectures

**Lawrence Christiano** delivered a keynote lecture on "**Financial Frictions in Macroeconomics**". In his talk, he refers to recent research on Macroeconomics and Finance, with a focus on the empirical work conducted on the United States in particular. The starting point of his analysis is the balance sheet of the whole financial system: the frictions identified on the liabilities side (that captures the borrowing that the US financial system

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<sup>1</sup> INFER is a non-profit organization supporting science and research in all areas of economics. It currently has more than 250 active members and several institutional members, across 37 countries on five continents, as well as a large pool of more than 1,000 occasional participants and supporters. INFER encourages scientific discussion on specific topics during workshops and conferences and offers numerous publication possibilities to its members.

does from the public) emphasize the banking system itself as a source of financial disturbance. This type of crisis is a relatively rare event in countries as the US, but when they happen, they can do massive harm to the economy (as in the case of the Great Recession and the Great Depression). Financial frictions on the asset side of banks' balance sheet (which translates the relationship between banks and the non-financial entities to whom they lend) are specifically linked to the non-financial sector. They are driving the type of shocks that occur in "normal times". On this basis, further on, a modelling setting is proposed to analyze "normal times" shock on the asset side and an analytical framework is conducted to study crisis times shocks on the liabilities side. In the first setting, the policy conclusions that can be derived are the following: governments should subsidize non-financial business in a recession through fiscal policy tools or by expansionary monetary policy. In the same time, financial crisis analysis suggest that it is crucial (i) to have integrated data on the overall financial system (and to be able to capture the shadow banking system) and (ii) to identify the economic inefficiencies in banking and the macroprudential policies required to correct those inefficiencies.

The keynote lecture on "**Asset Pricing in Monetary Economies**" given by **Randall Wright** (based on a joint work with **Lukas Altermatt** and **Kohei Iwasaki**) is constructed in a New monetarist approach. It reviews and extends recent research on markets where liquidity plays a crucial role. It provides further key implications for asset pricing. The analysis goes beyond classical general equilibrium theory and captures liquidity by considering the process of "exchange" in the presence of various frictions. The objective is to show how money and other assets interact in the presence of these frictions. The analytical framework incorporates sufficient frictions to generate an endogenous role for money as a medium of exchange. It also shows how assets can get priced above their fundamental values, as they can also provide liquidity (by acting as a medium of exchange or by serving as collateral). It is also underlined how the liquidity values of money and assets interact, and how they are impacted by changes in parameters such as acceptability, pledgeability. The authors also stress that the methods developed in this research can be easily adapted to understand various types of assets, including equity in productive technologies, simple bonds, neoclassical capital, and housing.

## 2. Crisis

**Jonathan Benchimol** and **Sergey Ivashchenko** show in their article "**Switching Volatility in a Nonlinear Open Economy**" how uncertainty can drastically change countries behavior and policies around a crisis. They put a focus on the effects of foreign shocks on the economies, by considering the Global Financial Crisis (GFC) effects in the Euro area. The authors estimate an open-economy nonlinear dynamic stochastic general equilibrium (DSGE) model for the Euro area and United States including Markov-switching volatility shocks and show that these shocks were significant during the global financial crisis compared with calm periods. They underline how US shocks from both the real economy and financial markets affected the Euro area economy and how bond reallocation occurred between short- and long-term maturities during the GFC. Hence, regime switching becomes an important facet of business cycles, in particular during financial turbulences. This modeling framework also suggests that

it is important for policymakers to consider nonlinear models and switching volatility shocks when uncertainty about a current regime increases.

The article **"The Cost of Banking Crises: Does the Policy Framework Matter?"** by **Grégory Leveuge, Yannick Lucotte and Florian Pradines-Jobet** empirically studies, based on a sample of 146 countries over the period 1970-2013, how monetary policy, fiscal policy and exchange rate settings affect the occurrence and the cost of systemic banking crises. A focus is put on the stringency of these policy frameworks. A restrictive policy framework can promote banking system stability, by enhancing discipline and credibility, and by providing financial room to policymakers. At the same time though, tying the hands of policymakers may be counterproductive and procyclical, especially if it prevents them from responding properly to financial imbalances and crises. The analysis reveals a trade-off between stringency and flexibility. Extremely restrictive policy features such as corner exchange rate regimes, budget balance rules without "friendly" clauses, and a high degree of both monetary policy conservatism and independence tend to make the expected costs of crises higher. In contrast, by combining discipline and flexibility, fiscal rules with easing clauses, intermediate exchange rate regimes and an inflation targeting framework can considerably limit the expected costs of banking crises. Hence, the authors provide evidence for the benefits of policy settings based on "constrained discretion" : the latter seems suitable for minimizing the expected costs of banking crises, and its benefits prevail under different monetary and also fiscal and exchange rate regimes. Considering the monetary, fiscal and exchange rate arrangements together, is found to be the most efficient policy-mix framework to limit the cost of banking crises.

**Xinhua Gu Pui, Sun Tam, Chun Kwok Lei and Xiao Chang** explain in their paper **"The Effects of Inequality in the 1997-98 Asian Crisis and the 2008-09 Global Tsunami: the Case of Five Asian Economies"** why the Asian banking sector was so vulnerable to financial crisis in 1997-98 but so resilient to the global turmoil in 2008-09. The theoretical setting and the empirics based on panel-data regressions, developed in the paper, confirm the role of income inequality (measured through a Gini index) in the two financial crises. Rising income inequality in several emerging Asian countries is found to exert an indirect yet ultimate impact on financial instability: it triggered inflows of short-term capital flows from abroad, which were not invested productively and coupled with current account deficits ultimately caused the Asian Financial Crisis of 1997-98. At the same time, declining income inequality in these five Asian countries during the recent global financial crisis made them less vulnerable than the developed world. The change of level of inequality may affect an economy's growth strategy, which has a fundamental implication for external vulnerability and crisis risk. The authors also show that economic growth is financially less risky if led by export with stable trade surpluses than by over investment funded with volatile capital flows.

### **3. Monetary and fiscal policies spillovers**

The article **"Echo over the Great Wall: Spillover Effects of QE Announcements on Chinese Yield Curve"** by **Mucai Lina and Linlin Niu** examines the spillover effects of announcements of quantitative easing (QE) conducted in several developed economies on the Chinese Treasury yield curve. In particular, the authors show that among the QE announcements from the central banks of US, UK, Eurozone, and Japan, significant impacts on China's

Treasury yields were exerted by only the US QE, a finding that remained robust across a variety of methods and model specifications. Hence, despite of China's firewall of cross-border capital control, it is shown that US QE announcements move the Chinese yield curve immediately and significantly. This impact is found to be exerted through both signaling and portfolio balancing channels. The impact of the US QE on Chinese yields, although not always significant, is comparable, in size, to China's own monetary policy shocks.

The paper **"Identifying External Debt Shocks in Low- and Middle-Income Countries"** by **Xuguang Simon Sheng** and **Rubena Sukaj** proposes new measures of external debt shocks for 120 low- and middle-income countries over the period 1975-2018. The authors use a unique loan-level dataset from the World Bank's Debtor Reporting System and identify the shock in two steps. They first calculate the difference between actual and predicted net disbursement on external debt obligation for each loan and then take aggregation at the country-year level. During expansionary times, external debt shocks lead to persistent decreases in the external debt to GDP ratio, possibly due to the availability of other sources of financing. During recessionary episodes, however, they observe heavy reliance on external debt financing for most of developing countries. This reliance is more substantial for countries with higher levels of external debt stock, raising serious concerns for debt distress in these countries and their way to building resilience.

The article **"Are Global Spillovers Complementary or Competitive? Need for International Policy Coordination"** by **Keshab Bhattarai**, **Sushanta K. Mallick** and **Bo Yang** analyzes whether technology and monetary policy shocks get transmitted between advanced and emerging market economies and to what extent they generate complementary or competitive effects. The authors develop and estimate a two-country DSGE model, where India, as an emerging economy, had strong competitive policy effects as well as complementary technology effects with the US. The estimated VAR and DSGE models in this paper illustrate how the business cycle effects of interdependence between India and the US could be explained through the capital flows and trade channels. The authors mainly investigate whether analysis from a SVAR model provides empirically similar conclusions to those from a macroeconomic theory-based DSGE model in measuring the impact of demand-side policy and technology shocks. They use the same time series data to estimate the SVAR models and to calibrate and estimate the DSGE model. Finally, they conclude that monetary and fiscal policy shocks are competitive between the US (advanced economy) and India (emerging market), while domestic and global technology shocks or the exchange rate shocks have complementary effects. Intuitively, technology enhances productivity in both countries, while policy shocks tend to drive capital to a country with higher rate of return. Thus, policy shocks in advanced countries could have unintended effects in terms of capital inflows to emerging economies and hence greater coordination of policies can help limit adverse cross-border spillovers.

#### **4. Fiscal policies**

In their paper **"Fiscal policy and fiscal fragility: Empirical evidence from the OECD"**, **Makram El-Shagi** and **Gregor Von Schweinitz** investigate to which extent the fiscal position affects fiscal multipliers in 17 OECD countries over the period 1978 to 2009. By using disaggregate data on fiscal policy shocks, they can document that consolidation through spending is preferable to consolidation through tax increases. Further, they build different models using

a large battery of alternative fragility indicators, thereby contributing to the literature on proper measurement of fiscal fragility. This is done in addition to the key contribution of this paper which is to answer to the following question: when a country should consolidate? The authors show that, in normal times, consolidation, can be contractionary in short and medium run. They also find that consolidation in fragile times is barely so. These results have strong policy implications: they do not validate the general concern underlying that countries that are already in a problematic situation cannot be expected to consolidate to avoid total collapse. This does not necessarily mean that it is the better choice for a country to consolidate, once it runs out of fiscal space. The results simply underline that there is no reason for further delays once the situation gets dire.

**Hao Jin** and **Chen Xiong** find in their article "**Fiscal Stress and Monetary Policy Stance in Oil-Exporting Countries**" that for specific oil-exporting countries, the correlation between exchange rates and oil prices is strongly negative during periods of significant oil price drop and becomes much weaker or even positive, in other periods. To better understand this time-varying asymmetric correlation, the authors develop and estimate a Markov switching small open economy New Keynesian model with oil income as a source of government revenue. In this setting, monetary and fiscal policy coefficients are allowed to switch across "active" and "passive" regimes: this is done in order to assess the importance of monetary and fiscal policy interactions in producing the time-varying asymmetric correlation between exchange rates and oil prices. The modelling setting is estimated for Russia, which is a prototype oil-exporting country. The results underline that the sharp falling of oil prices generates fiscal stress that keeps the fiscal policy from accommodating public debt. Monetary policy in turn must adjust to passively tolerate higher inflation and currency depreciation so as to restore the backing of government debt. During other periods of time, monetary policy actively controls inflation and the exchange rate, while fiscal policy adjusts to accommodate government debt accumulation. In this context, the oil price variations are isolated from the exchange rate changes. Moreover, the impulse responses analysis show that the transmission channels of oil price shocks vary significantly across different fiscal and monetary policy combinations.

**Caterina Rho** and **Manrique Saenz** analyze in their article "**Financial Stress and the Probability of Sovereign Default**" the impact of fiscal vulnerabilities and macroeconomic determinants on sovereign default risk in a large sample of 113 countries (1990-2014), in times of global or local financial stress compared to tranquil times. To do this, they examine the impact of debt burden indicators and macro fundamentals on risk of sovereign default in emerging markets and advanced economies. They show how economic vulnerabilities may remain latent for long periods and may only reveal their full impact on a country's fiscal sustainability when the economy undergoes a significant shock. The results underline that financial stress significantly amplifies the impact of the debt-to-GDP ratio, the stock of international reserves, and GDP per capita on the probability of sovereign default. Hence, overall, the paper extends the current literature, and contributes to a discussion of the role of financial stress in the amplification of macroeconomic dynamics.

## **5. Current account and macroeconomic stability**

The article "**Housing prices and Trade surpluses in China: An Inter-temporal Approach**" by **Qiuyu Chen**, **Ling Feng**, **Zhiyuan Li** and **Ching-Yi Lin** analyzes the relation between housing

prices and trade surpluses in China. To this end, the authors build an inter-temporal current account model and show the existence of two channels having opposite effects: the first channel is the intra-temporal substitution channel (it discourages current consumption of tradable goods, leading to trade surpluses); the second is the inter-temporal substitution channel, which instead leads to trade deficits. When intra-temporal channel dominates, expected rising housing prices lead to trade surpluses. However, borrowing constraints on housing purchases may weaken the intra-temporal substitution channel and thus weaken the positive correlation between expected housing prices and trade surpluses. Further on, the authors test the predictions of their theoretical model using Chinese data and they find a positive association between “expected rising housing prices” and trade surpluses. They also propose a possible explanation for this finding: strong intra temporal substitution elasticity due to large male to female sex ratios in China. Moreover, the positive relation between expected rising housing prices and trade surpluses is found to be weaker in regions with more stringent borrowing constraints, consistent with the theoretical model’s prediction.

The article "**Current Account Drivers and Exchange Rate Regimes in Central and Eastern Europe**" by **Kersti Harkmann** and **Karsten Staehr** aims to determine the factors driving the current account dynamics, comparing countries with floating and fixed exchange rate regimes. The analysis is conducted over the time span 1997-2017 on a sample of 11 Central and Eastern European countries that are European Union members. These countries have experienced large deficits and pronounced fluctuations in their current account balance since the mid-1990s. Both domestic pull factors and external push factors are used to explain the current account dynamics in these countries, based on panel data models. The estimations are carried out for the cases of floating and fixed exchange rate regime countries. The current account exhibits substantial persistence in both cases. For the floaters, the current account has been driven by domestic factors while external factors appear unimportant. For the fixers, the current account has mainly been driven by external factors, suggesting that there is substantial vulnerability to external developments. Overall, it can be underlined that the exchange rate regimes have been of key importance in shaping the factors driving the current account in the countries from Central and Eastern Europe.

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