Financial Globalisation, Monetary Policy Spillovers and Macro-modelling: Tales from 1001 Shocks*

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Abstract

Financial globalisation and spillovers have gained immense prominence over the last two decades. Yet, powerful cross-border financial spillover channels have not become a key theme in structural monetary models. Against this background, we hypothesise that New Keynesian DSGE models that do not feature powerful financial spillover channels confound the effects of domestic and foreign disturbances when confronted with the data. We derive predictions from this hypothesis and subject them to data on monetary policy shock estimates for 28 economies obtained from more than 250 monetary models in the literature. Consistent with the predictions from our hypothesis we find: Monetary policy shock estimates obtained from New Keynesian DSGE models that do not account for powerful financial spillover channels are contaminated by a common global component; the contamination is more pronounced for economies that are more susceptible to financial spillovers in the data; and the shock estimates imply implausibly similar estimates for the global output spillovers from monetary policy in the US, the euro area and the UK. None of these findings applies to monetary policy shock estimates obtained from VAR and other statistical models, financial market expectations and the narrative approach.

Keywords: Financial globalisation, spillovers, monetary policy shocks, New Keynesian DSGE models.
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1 Introduction

A salient feature of the global economy since the 1990s has been the dramatic rise of financial globalisation. Whether measured by (gross) capital flows or indicators reflecting the extent of legal capital account restrictions, economies' financial markets have been exhibiting an increasing degree of integration. As a result, the global economy is progressively becoming subject to large cross-country spillovers through financial channels, in particular in case of monetary policies in systemic economies. Indeed, a growing body of empirical research provides ample evidence that financial interlinkages play a critical role in the transmission of shocks across economies (Ehrmann and Fratzscher, 2003, 2005, 2009; Ehrmann et al., 2011; Hale et al., 2016). Similarly, several studies document the sizable impact of—in particular US—monetary policy on output and inflation in the rest of the world that materialises through financial spillover channels (Kim, 2001; Canova, 2005; Nobili and Neri, 2006; Dedola et al., 2015; Feldkircher and Huber, 2015; Georgiadis, 2016). And related work even suggests that world financial markets are subject to a global financial cycle, which is argued to materialise in variations in global risk aversion and to be driven by US monetary policy (Bekaert et al., 2013; Ghosh et al., 2014; Bruno and Shin, 2015b,a; Miranda-Agrippino and Rey, 2015; Passari and Rey, 2015; Rey, 2015).

At the same time, over the last two decades important advances in structural monetary modelling have been achieved, as reflected in the huge amount of work on New Keynesian dynamic stochastic general equilibrium (NK DSGE) models. While the first NK DSGE models focused on frictions in price setting and labor markets (Smets and Wouters, 2003; Christiano et al., 2005), the global financial crisis epitomised the role of frictions in financial markets for the propagation of shocks. The resulting wave of work has focused on introducing frictions in *domestic* financial markets (Gertler and Karadi, 2011; Christiano et al., 2014). Advances have also been made in generalising the initially closed-economy NK DSGE models to analyse the international transmission of shocks and policy design in open economies, giving rise to New Open-Economy Macroeconomics (NOEM, Obstfeld and Rogoff, 1996). After two decades of continuous development and research it is fair to say that NK DSGE models have become standard elements of macroeconomists' toolbox. In particular at central banks elaborate versions of NK DSGE models are routinely used, for example in order to determine what shocks have been drivers of recent business cycle movements. This is an important exercise, as the appropriate policy response to business cycle fluctuations clearly depends on the type of shocks that are driving the economy. Against the background of the continuous strengthening of cross-border financial integration, it is noteworthy that powerful spillover channels based on frictions in international financial markets are not routinely incorporated in NK DSGE models.[1] Possible consequences of this discrepancy between empirics and theory

[1] NK DSGE models that do consider frictions in international financial markets include Devereux and Yetman (2010), Kollmann et al. (2011a), Dedola and Lombardo (2012), Ueda (2012), Banerjee et al. (2016)

have not been explored systematically yet.

In this paper we hypothesise that the structural monetary models used in the profession typically fail to adequately account for the importance of financial spillover channels in the data. We argue that, as a consequence, when confronted with the data these NK DSGE models label rest-of-the-world monetary policy shocks as domestic ones. We test this hypothesis by verifying—in a meta-study-like fashion—if three predictions are borne out by the NK DSGE models used in the literature. Specifically, under our hypothesis we expect: First, domestic monetary policy shock estimates are contaminated by a common global component and are therefore positively correlated across economies.[2] Second, the common global component in the domestic monetary policy shock estimates is more dominant and thereby gives rise to larger cross-country correlations for pairs of economies that are more strongly integrated with global financial markets. Third, estimates of the global spillovers from domestic monetary policy obtained using shock estimates from NK DSGE models in time-series regressions are implausibly similar across spillover-sending economies, as they all reflect the response to a common global monetary policy shock.

We provide empirical evidence that is consistent with the predictions from our hypothesis based on a database of monetary policy shock estimates for 28 economies obtained from more than 250 structural and non-structural monetary models used in the literature for the time period from 1993 to 2007. First, we document that when confronted with the data NK DSGE models produce domestic monetary policy shock estimates that are positively correlated across economies. In contrast, monetary policy shock estimates obtained from VAR and other statistical models, derived from financial market expectations and the narrative approach are not cross-country correlated. Importantly, we document that the contamination by a common global component is even more severe for monetary policy shock estimates obtained from NK DSGE models used at central banks and international organisations than for those from stylised NK DSGE models used in academia. Second, the cross-country correlations between monetary policy shock estimates obtained from NK DSGE models are particularly large for economies that are more strongly integrated with global financial markets. Third, using shock estimates obtained from NK DSGE models in time-series regressions produces estimates for the global output spillovers from US, euro area and UK monetary policy which are implausibly similar. In contrast, the relative magnitudes of the estimates of the global output spillovers from monetary policy in the US, the euro area and the UK are significantly different from each other and are more plausible when using shock estimates obtained from

as well as Nuguer (2016).

[2]That the true structural shocks are uncorrelated is impossible to verify, but is a fundamental assumption in macroeconomics. For example, Bernanke (1986) states that "shocks should be primitive exogenous forces that are uncorrelated with each other", as only un-correlatedness allows a meaningful interpretation of impulse response functions and variance decompositions. Andrle (2014) discusses extensively the notion that (cross-country) correlated estimates of the structural shocks are a sign of model mis-specification in NK DSGE models.

non-NK DSGE models.

Our paper is related to the literature which finds that powerful financial spillover channels in structural monetary models are crucial in order to replicate the cross-country business cycle correlations in the data (Iacoviello and Minetti, 2006; Ueda, 2012; Yao, 2012; Chin et al., 2015). Within this literature, our paper is most closely related to Justiniano and Preston (2010) as well as Alpanda and Aysun (2014), who find that standard open-economy NK DSGE models fail to replicate the large degree of cross-country business cycle co-movement in the data, and that they imply only an implausibly minor role of foreign disturbances for the evolution of domestic variables. More specifically, these studies find that the theoretical moments implied by models without powerful financial spillover channels are much closer to their empirical counterparts if it is assumed that the structural shocks are cross-country correlated. This result is consistent with our finding that NK DSGE models that do not account for financial spillover channels produce cross-country correlated monetary policy shock estimates. While the analyses of Justiniano and Preston (2010) as well as Alpanda and Aysun (2014) are based on counterfactual simulations of two *specific* structural models, in this paper we consider a database of monetary policy shock estimates from more than 250 monetary—including non-structural—models estimated for a range of economies.

The empirical evidence we obtain in this paper also supports the hypothesis of a global financial cycle that is driven by US monetary policy (Bekaert et al., 2013; Bruno and Shin, 2015b,a; Miranda-Agrippino and Rey, 2015; Passari and Rey, 2015; Rey, 2015). Specifically, a prediction from the global financial cycle hypothesis in the light of our paper is that monetary policy shock estimates from NK DSGE models which do not feature powerful financial spillover channels should contain a US component. Indeed, we find that the cross-country correlations between the monetary policy shock estimates obtained from NK DSGE models for non-US economies are larger for country pairs that are more financially integrated with US—in addition to global—financial markets. The empirical evidence we obtain is also consistent with the important role of global banks in financial integration prior to the global financial crisis (Goldberg, 2009; Cetorelli and Goldberg, 2012; Bruno and Shin, 2015b,a; Morais et al., 2015). Specifically, we find that the contamination by a common global component is particularly severe for monetary policy shock estimates for economies which are more financially integrated through international banking interlinkages. Finally, we also obtain some tentative evidence that is consistent with the trilemma in international macroeconomics (Obstfeld et al., 2005; di Giovanni and Shambaugh, 2008; Klein and Shambaugh, 2015; Obstfeld, 2015): The contamination of monetary policy shock estimates by a common global component is less severe for emerging market economies which impose capital controls and which feature flexible exchange rate regimes.

The insights from our paper suggest that more efforts need to be devoted to the modelling of the global context as well as powerful financial spillover channels in structural monetary models that are used for policy analysis, especially at central banks. Indeed, we find that the contamination by a common global component is less severe if the monetary policy shock estimates stem from NK DSGE models that feature an explicit multi-country dimension and/or frictions in international financial markets. Failure to account for the global context and powerful financial spillover channels may imply inconsistent parameter estimates obtained by likelihood-based methods, as the monetary policy shock estimates entering the likelihood function are mis-measured. Moreover, mis-measured monetary policy shock estimates imply mis-leading variance and historical decompositions. Having said that, it is important to emphasise that our paper is not to be read as a general critique or dismissal of the use of NK DSGE models in the profession. Consistent with the view of Blanchard (2016), we believe that NK DSGE models "are eminently improvable and central to the future of macroeconomics", and that whether specific elements—such as powerful financial spillover channels—are necessary depends on the purpose the models are used for.

The rest of this paper is organised as follows. In Section 2, we illustrate the mechanics of our hypothesis and derive testable predictions based on a counterfactual Monte Carlo experiment. In Section 3 we present our monetary policy shock database and test the predictions from our hypothesis derived in Section 2. Section 4 presents additional testable predictions, competing hypotheses that may explain the positive cross-country correlations between the NK DSGE model monetary policy shock estimates in our database as well as robustness checks. Finally, Section 5 concludes.

2 Financial globalisation, monetary policy spillovers and structural macro-modeling

In this section we consider a counterfactual Monte Carlo experiment in order to motivate our hypothesis. Specifically, the Monte Carlo experiment consists of three steps. First, we simulate data based on a structural multi-country model with financial spillover channels and cross-country uncorrelated monetary policy shocks. The model features "core" (the US) and "non-core" (the euro area and Japan) economies which differ in the magnitude of the financial spillovers they emit. Second, we obtain estimates of the monetary policy shocks for the euro area and Japan by feeding the simulated data into intentionally mis-specified single-country versions of the true data-generating process; specifically, the single country models do not feature financial spillover channels. Third, we determine the cross-country correlation between the monetary policy shock estimates for the non-core economies of the euro area and Japan obtained in step two. We also utilise the shock time series estimates to obtain estimates of the spillovers from monetary policy in the euro area (or Japan) to the US using local projections. We run the Monte Carlo experiment for different parameterisations of the data-generating process in order to assess the role of the strength of financial spillovers for the properties of the monetary policy shock estimates.

2.1 The data-generating process

The basic building blocks of the multi-country model of Coenen and Wieland (2002) are an IS-curve, a Phillips curve, and a Taylor-rule for each economy.[3] The model features individual blocks for the core economy of the US, as well as the non-core economies of the euro area and Japan. Importantly, we specify the monetary policy shocks to be uncorrelated across economies. We introduce a financial spillover channel by modifying the original specification of nominal long-term interest rates $i_{it}^{(l)}$ through the term structure in Coenen and Wieland (2002) and consider

$$i_{it}^{(l)} = (1-\vartheta_i)\cdot\left(\frac{1}{8}\sum_{\ell=0}^{7}E_t i_{i,t+\ell}^{(s)}\right)+\vartheta_i\cdot\left(\sum_{j=1,j\neq i}^{N}\omega_{ij}\, i_{jt}^{(l)}\right), \qquad (1)$$

where $i,j\in\{us,ea,ja\}$, $i_{it}^{(s)}$ represents the nominal short-term interest rate, and w_{ij} denotes bilateral weights. The second term on the right-hand side of Equation (1) gives rise to potentially powerful financial spillovers. Specifically, the higher ϑ_i, the stronger the spillovers from foreign to domestic long-term interest rates. Analogously, the higher ω_{ij}, the stronger the spillovers to domestic long-term interest rates in economy i from economy j relative to those from other foreign economies s, $s\neq i,j$. This specification of financial spillovers in long-term interest rates is consistent with their strong interdependence in the data (see, for example, Ehrmann and Fratzscher, 2003, 2005; Ehrmann et al., 2011; Chin et al., 2015).

We examine two polar parameterisations for ϑ_i and $\omega_{i,us}$ in Equation (1), namely a "small financial spillovers" and a "large financial spillovers" parameterisation. In the "small financial spillovers" parametrisation we set $\vartheta_i=\omega_{i,us}=0.025$. In the "large financial spillovers" parametrisation we set $\vartheta_i=0.4$ and $\omega_{i,us}=0.9$. For the US we fix $\vartheta_{us}=0.2$ and $w_{us,j}=0.5$, reflecting our assumption of the US being the core economy. The dynamics of domestic and foreign variables in response to monetary policy shocks under the two polar parameterisations are qualitatively plausible and—in particular for the "large financial spillovers" parametrisation—quantitatively consistent with the findings on monetary policy spillovers in the empirical literature (see Figures 8 and 9 in Appendix C.2 as well as Dedola et al., 2015; Feldkircher and Huber, 2015; Banerjee et al., 2016; Chen et al., 2016; Georgiadis, 2016).

[3]The model of Coenen and Wieland (2002) is semi-structural: The components are not explicitly derived from micro-founded optimisation problems, but are very similar to those in rigorously constructed structural monetary models. Appendix C.2 provides a detailed description of the model.

2.2 Cross-country correlations of monetary policy shocks

Figure 1 presents the distribution of the cross-country correlations between the monetary policy shock estimates for the non-core economies of the euro area and Japan obtained from feeding the data simulated from the multi-country data-generating process into the corresponding single-country versions across the 1,000 replications of the Monte Carlo experiment. Under the "small financial spillovers" parametrisation, the cross-country correlations are not noticeably (and statistically significantly) different from zero, which is in line with the absence of such correlation in the data-generating process. In contrast, under the "large financial spillovers" parametrisation the cross-country correlations are large and positive, with a mean of around 0.4 across replications. Thus, using single-country models that do not adequately account for the financial spillover channels in the data-generating process produces domestic monetary policy shock estimates which are cross-country correlated.

In order to identify the source of this correlation, we run the regression

$$\widehat{e}^{mp}_{ea,t} = \sum_{i \in ea,us,ja} \left(\beta^{mp}_i \cdot e^{mp}_{it} + \beta^{d}_i \cdot e^{d}_{it} + \beta^{cp}_i \cdot e^{cp}_{it} \right) + u_{it}, \tag{2}$$

where $\widehat{e}^{mp}_{ea,t}$ represents the euro area monetary policy shock estimate obtained from the single-country model, and $\cdot e^{mp}_{it}$, e^{d}_{it}, and e^{cp}_{it} denote the true monetary policy, demand and cost-push shocks.[4] Figure 2 presents the distribution of the coefficient estimates $\widehat{\beta}^{j}_{i}$ in Equation (2) across replications of the Monte Carlo experiment. The results suggest that in particular under the "large financial spillovers" parametrisation the estimate of the euro area monetary policy shock $\widehat{e}^{mp}_{ea,t}$ obtained from the single-country model is a convolution of the true monetary policy, demand and cost-push shocks of the euro area, the US and Japan. Most importantly, the true US monetary policy shock exhibits the largest loading on the estimated euro area monetary policy shock besides the true euro area monetary policy shock; the results for the regression of $\widehat{e}^{mp}_{jp,t}$ are analogous. Thus, the cross-country correlation between the estimated monetary policy shocks of the euro area and Japan arises due to a common US component. In particular, the contamination of domestic monetary policy shock estimates by a US component occurs because (i) in the true data-generating process a US monetary policy shock spills over to domestic financial markets in the euro area and Japan according to Equation (1); (ii) when using the mis-specified single-country models for the non-core economies of the euro area and Japan for the estimation of the monetary policy shocks, the US monetary policy shock is erroneously labelled as domestic monetary policy shock.

[4] We standardise the time-series of all variables in Equation (2) in order to facilitate the comparison of the magnitudes of the coefficient estimates.

2.3 Spillover estimates

In each replication of the Monte Carlo experiment we estimate spillovers from euro area monetary policy to the US using local projections (Jorda, 2005). Specifically, we estimate

$$y_{us,t+h} - y_{us,t-1} = \alpha^{(h)} + \sum_{k=0}^{p} \gamma_k^{(h)} \widehat{e}_{ea,t-k}^{mp} + \sum_{k=1}^{n} \delta_k^{(h)} y_{us,t-k} + \sum_{k=0}^{q} \boldsymbol{x}_{us,t-k} \boldsymbol{\beta}_k^{(h)} + u_{us,t}^{(h)}, \tag{3}$$

for $h = 0, 1, \ldots, H$, where $y_{us,t+h}$ represents the US output gap and $\widehat{e}_{ea,t}^{mp}$ the euro area monetary policy shock estimates obtained from using the single-country model without financial spillovers. The control variables in $\boldsymbol{x}_{us,t}$ include inflation, short and long-term interest rates as well as the real effective exchange rate. The data for $y_{us,t}$ and $\boldsymbol{x}_{us,t}$ stem from the simulation of the multi-country data-generating process with financial spillovers. In every replication of the Monte Carlo experiment we use the simulated data both to estimate the monetary policy shocks in the single-country models and for the controls in the estimation of the local projections in Equation (3).

Figure 3 presents the estimated spillovers from euro area monetary policy to the US output gap for the "small financial spillovers" (left-hand side panel) and the "large financial spillovers" (right-hand side panel) parametrisation. The black solid lines represent the true spillovers in the data-generating process, and the red dashed lines the averages of the spillover estimates across replications of the Monte Carlo experiment. The results suggest that using domestic monetary policy shock estimates obtained from a single-country model that does not adequately account for strong financial spillover channels in the data produces excessively large estimates of the spillovers from euro area monetary policy to the US. The explanation for this result is that the euro area monetary policy shock estimates $\widehat{e}_{ea,t}^{mp}$ used in the local projections in Equation (3) contain a US component. Specifically, as the US component has a large impact on the domestic monetary policy shock estimates under the "large financial spillovers" parametrisation, the spillover estimates actually represent the effects of a US monetary policy shock on US variables; and, of course, in the true data-generating process the domestic effects of a US monetary policy shock are quantitatively significant (see Figure 8 in Appendix C.2).[5]

2.4 Testable predictions

We hypothesise that NK DSGE models used in the profession are generally subject to the same failure to account for financial spillovers as the single-country models in the counter-

[5] Analogously, the estimates of the spillovers from euro area monetary policy to Japan would in fact represent spillovers from US monetary policy to Japan, which are—due to the core properties of the US economy in our Monte Carlo experiment—notably larger than the true monetary policy spillovers from the euro area to Japan.

factual Monte Carlo experiment presented above. In the rest of this paper we thus test the following three predictions from our hypothesis:

Prediction 1: *Monetary policy shock estimates obtained from NK DSGE models are cross-country correlated.*

Prediction 2: *The cross-country correlation is larger for country pairs which are more susceptible to financial spillovers.*

Prediction 3: *Estimating the global effects of domestic monetary policy using the monetary policy shock estimates obtained from NK DSGE models in time-series—such as local projection—regressions results in large and implausibly similar spillover estimates for different spillover-sending economies.*

In order to test our hypothesis, we examine in a meta-study-like fashion whether Predictions 1-3 prevail in a sample of monetary policy shock estimates obtained from a wide range of NK DSGE and non-NK DSGE models in the literature.

3 A monetary policy shock database

The monetary policy shock estimates database we have set up contains more than 250 time series of monetary policy shock estimates which pertain to 28 economies (see Table 1). The monetary policy shock estimates are obtained from estimated NK DSGE models, various blends of VAR models (structural VAR and VECM models, factor-augmented VAR models, dynamic factor models), other statistical models (term-structure models, shadow-rate models, Taylor-rule estimations), approaches based on financial market expectations, as well as the narrative approach (see Table 2). Tables 3 to 6 provide information on the reference, the time period coverage, the model type and other characteristics of the models from which the monetary policy shock estimates are obtained. One noteworthy observation is that only few of the NK DSGE models from which the monetary policy shock estimates in our database stem have an explicit multi-country dimension in the sense that they feature a foreign block; even fewer models feature financial spillover channels based on frictions in international financial markets. The sample period we consider for the analysis in the rest of this paper is 1993q1 to 2007q2.

3.1 Correlation patterns of monetary policy shock estimates

We start testing the predictions from our hypothesis by examining the correlation patterns of the monetary policy shock estimates in our database. Figure 4 displays a heat map of the correlations between the monetary policy shock estimates obtained from NK DSGE models. The correlations between monetary policy shock estimates which stem from different NK DSGE models but pertain to the same economy are located on the diagonal blocks (within-country correlations); the correlations between monetary policy shock estimates which stem from different NK DSGE models and pertain to different economies are located on the off-diagonal blocks (cross-country correlations). Figure 5 shows the distributions of the within-country and cross-country correlations. The within-country correlations are clearly positive on average. This is to be expected, as for a given economy the different models are attempting to estimate the same object. As one would also expect—because they attempt to estimate different objects—the cross-country correlations are on average smaller than the within-country correlations. However, also the mean of the cross-country correlations is positive and statistically significantly different from zero. This empirical evidence is consistent with the first prediction from our hypothesis that NK DSGE models in the literature fail to adequately account for the importance of financial spillover channels in the data.

Recall that we hypothesise that monetary policy shock estimates obtained from NK DSGE models are contaminated by a global component because the structure of this class of models typically does not account for economies' susceptibility to monetary policy spillovers from abroad through financial channels. Given that we also have monetary policy shock estimates obtained from non-NK DSGE models in our database we can carry out placebo tests of our hypothesis. Specifically, as non-structural models impose a looser structure on the data than NK DSGE models, the implied monetary policy shock estimates should not be cross-country correlated.[6] Accordingly, a placebo test of the first prediction from our hypothesis is shown in Figure 6: The cross-country correlations between monetary policy shock estimates obtained from non-NK DSGE models are on average zero.

3.2 The role of financial integration for cross-country correlations between monetary policy shock estimates

According to the second prediction from our hypothesis, we expect contamination by a common global component and thereby the cross-country correlations to be larger for country pairs which are more susceptible to financial spillovers from abroad. Moreover, also consistent with the "global financial cycle" hypothesis (Rey, 2015), if the common component in the monetary policy shock estimates is largely driven by the core economy's monetary policy, we expect the cross-country correlations to be larger for pairs of economies which are more strongly integrated with US financial markets.

In order to test these predictions from our hypothesis we consider country-pair regressions. Specifically, suppose we have monetary policy shock estimates for N economies in our database. Furthermore, suppose that for economy i we have a total of L_i monetary

[6] Indeed, when we estimate country-specific VAR models on the simulated data in the Monte Carlo experiment in Section 2 and apply recursive identification, the resulting monetary policy shock estimates for the euro area and Japan are on average uncorrelated.

policy shock estimates, and that we refer to one of those series by ℓ_i; similarly, suppose we have a total of M_j monetary policy shock estimates for economy j, and that we refer to one of those time series by m_j. We then estimate the regression

$$\rho_{\ell_i,m_j} = \alpha_i + \gamma_j + \boldsymbol{x}_{ij} \cdot \boldsymbol{\beta} + u_{\ell_i,m_j}, \tag{4}$$
$$i,j = 1,2,\ldots,N, \quad i \neq j, \quad i,j \neq us, \quad \ell_i = 1,2,\ldots,L_i, \quad m_j = 1,2,\ldots,M_j,$$

where α_i and γ_j are country fixed effects, and where $\boldsymbol{x}_{ij}$ includes measures of economy i's and j's combined susceptibility to financial spillovers from the rest of the world as well as the US, respectively. We measure the former by the product of economy i's and j's overall gross foreign asset and liability position relative to GDP, and the latter by the product of the shares of economy i's and j's bilateral gross foreign asset and liability position with the US in their overall external balance sheet.[7] The data are taken from the External Wealth of Nations (EWN) Database of Lane and Milesi-Ferretti (2007) and the IMF's Coordinated Portfolio Investment Survey (CPIS).[8] For easier interpretation we standardise the data on the explanatory variables in Equation (4). We run the regression of Equation (4) on the sample of cross-country correlations between monetary policy shock estimates obtained from NK DSGE models. Also, in the baseline regression sample we only include economies for which we have at least three NK DSGE model monetary policy shock time series estimates in our database; this we do in order to preclude that our results are driven by economies for which the information stems from a rather small number of models. Finally, we only include cross-country correlations that are calculated on the basis of at least 16 time series observations. Imposing these requirements implies dropping somewhat more than 10% of the cross-country correlations of monetary policy shock estimates from our sample.[9,10]

The estimation results for Equation (4) are reported in columns (1) to (3) in Table 7. Consistent with the second prediction from our hypothesis, the results indicate that the cross-country correlations between monetary policy shock estimates obtained from NK DSGE models are higher for pairs of economies which are more susceptible to financial spillovers from the rest of the world and the US. The role of economies' susceptibility to financial spillovers for the mis-measurement of domestic monetary policy shock estimates in the NK DSGE models in our database is also quantitatively significant: The cross-country correlation between the monetary policy shock estimates for a pair of economies whose susceptibility to financial spillovers is one standard deviation above the mean of all country pairs is higher by

[7] The effects of individual economies' non-interacted gross foreign asset and liability positions and the shares therein accounted for by bilateral positions with the US in Equation (4) are picked up by the fixed effects α_i and γ_j.

[8] Figure 10 in Appendix C.3 presents economies' overall and bilateral financial integration with the US in the data.

[9] We consider all correlations ρ_{ℓ_i,m_j} whether or not they are statistically significantly different from zero in the regression of Equation (4). Robustness checks in Section 4 document that our results are unchanged if we set to zero correlations which are not statistically significantly different from zero.

[10] In the estimation of the regression in Equation (4) we cluster standard errors at the country-pair level.

0.07, which is approximately equal to the average cross-country correlation in our database (see Figure 5). These results are consistent with the second prediction from our hypothesis.

Finally, also the second prediction from our hypothesis passes the placebo test: The results reported in column (4) in Table 7 document that cross-country correlations between monetary policy shock estimates obtained from non-NK DSGE models are not systematically related to economies' susceptibility to financial spillovers.[11]

3.3 Spillover estimates

The third prediction from our hypothesis is that using shock estimates obtained from NK DSGE models in time-series regressions to estimate the effects of domestic monetary policy on the rest of the world produces large and implausibly similar spillover estimates for different spillover-sending economies. In order to test this prediction, we estimate the global output spillovers from domestic monetary policy shocks using the shock estimates in our database in local projections analogous to those in Equation (3). The sample we consider includes quarterly observations for 45 spillover-receiving economies spanning—depending on data availability—the time period from 1993q1 to 2007q2. For the dependent variable in the local projections we consider the logarithm of economies' real GDP. The control variables include domestic and trading-partner short-term interest rates, consumer-price inflation, and real GDP.[12] We focus on the spillovers from monetary policy shocks for the US, the euro area and the UK. For each spillover-sending economy we extract the first principal component from all monetary policy shock time series estimates obtained from NK DSGE models which are available for the entire time period from 1993q1 to 2007q2, and use that principal component as shock measure in the estimation of the local projection.

The left-hand side panel in Figure 7 presents the averages of the estimates of the output spillovers from US, euro area and UK monetary policy across spillover-recipient economies. The estimates of the global output spillovers from monetary policy shocks in the US, the euro area and the UK are very similar. This finding is at odds with what we would expect given the differences in these economies' systemic importance for the global economy. However, this finding is consistent with the third prediction from our hypothesis that the spillover estimates

[11] This result is not due to differences between the sets of country-pairs included in the sample underlying our baseline regression in column (3) and the non-NK DSGE sample in the regression reported in column (4) in Table 7.

[12] For data on real GDP, consumer price inflation and short-term interest rates we draw on the GVAR Toolbox (see Smith and Galesi, 2011). The economies included are Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, China, Germany, Finland, France, Indonesia, India, Italy, Japan, Mexico, Malaysia, Netherlands, Norway, New Zealand, Peru, Philippines, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, Turkey, UK, and the US. We add data obtained from Haver Analytics for Bolivia, Colombia, Croatia, Czech Republic, Denmark, Hungary, Ireland, Israel, Poland, Portugal, Paraguay, Romania, and Russia. The trade weights we use for the calculation of country-specific trading partner variables stem from the IMF Direction of Trade Statistics.

reflect the effects of a global monetary policy shock by which the domestic monetary policy shock estimates obtained from NK DSGE models are contaminated.

Finally, also the third prediction from our hypothesis passes the placebo test: The right-hand side panel in Figure 7 shows that when using the principal components of non-NK DSGE model shock time series estimates in the local projections the estimates of the global output spillovers from US monetary policy are notably larger than those from the euro area and the UK, consistent with the extraordinary role of the US in the global economy. Moreover, the estimates of euro area monetary policy spillovers are larger than those of the UK, also consistent with their relative size and importance in the global economy.

4 Additional testable predictions, alternative explanations and robustness checks

4.1 Additional testable predictions

4.1.1 Role of banking integration

Research on financial integration prior to the global financial crisis allows us to refine the second prediction from our hypothesis. Specifically, the literature has emphasised the role of cross-border banking linkages for the international transmission of monetary policy in our sample period (see Goldberg, 2009; Cetorelli and Goldberg, 2012; Bruno and Shin, 2015b,a; Morais et al., 2015; Hale et al., 2016). We therefore enter the cross-country interactions of the share of portfolio, foreign direct and other investment in an economy's overall gross foreign asset and liability position as additional explanatory variables in Equation (4). Consistent with the prominent role of banks in the cross-border transmission of monetary policy documented in the literature for the time period before the global financial crisis, the results in column (2) in Table 8 suggest that contamination of monetary policy shock estimates obtained from NK DSGE models in our database by a common global component is more severe for economies for which "other investment"—which includes bank loans—accounts for a larger share in their overall gross foreign asset and liability position. Of course, the category of "other investment" also includes items unrelated to bank loans. Therefore, in column (3) we consider the ratio of non-resident bank loans relative to GDP as a direct measure of the importance of banking interlinkages.[13] The results are again consistent with the evidence on the importance of global banking integration for the international transmission of monetary policy prior to the global financial crisis.

[13]The data originally stem from the Bank for International Settlements and are consolidated in the World Bank's Financial Development and Structure Dataset (see Cihak et al., 2012).

4.1.2 Open-economy models

Another prediction from our hypothesis is that NK DSGE models that feature an explicit rest-of-the-world dimension and/or frictions in international financial markets should be less prone to labelling foreign monetary policy shocks as domestic ones when confronted with the data. This prediction can be tested by entering dummy variables—also interacted with economies' susceptibility to financial spillovers—that equal unity in case the shock estimates stem from a multi-country model, a small open-economy model, or a multi-country model with frictions in international financial markets in the regression of Equation (4). The relevant coefficient estimates reported in columns (2) to (5) in Table 9 are mostly consistent—even though not always statistically significant—with the second additional prediction from our hypothesis. In particular, NK DSGE models with such open-economy elements produce monetary policy shock estimates which are less cross-country correlated.

4.1.3 Capital controls and exchange rate flexibility

According to the Mundellian trilemma in international macroeconomics, economies are less susceptible to financial spillovers if they impose capital controls and/or let their exchange rate float. As a consequence, for a given degree of susceptibility to financial spillovers as measured by the stock of foreign assets and liabilities, we expect cross-country correlations between monetary policy shock estimates in our database to be lower for pairs of economies which impose capital controls and/or feature a higher degree of exchange rate flexibility. In column (2) in Table 10 we include in the regression of Equation (4) the products of economies' capital controls and their exchange rate flexibility as additional explanatory variables, respectively.[14] The results in column (3) indicate that cross-country correlations are indeed lower for—at least for emerging market—economies which impose capital controls and/or feature flexible exchange rates. However, the relevant coefficient estimates are not statistically significant.

4.2 Alternative explanations

4.2.1 Spillovers through trade

One might argue that an alternative explanation for the positive cross-country correlation between the monetary policy shock estimates in our database could be the existence of spillovers through trade combined with common mistakes in assessing current and future economic conditions by central banks in real time. Specifically, suppose the Federal Reserve and non-US

[14] We measure capital controls by the first principal component of the capital control/capital account openness indicators of Chinn and Ito (2006), Quinn and Toyoda (2008), as well as Fernández et al. (2015). The index of exchange rate flexibility is taken from Ilzetzki et al. (2010).

central banks, say the ECB and the Bank of Japan, all over-estimated real activity and inflation in the US in real time. As a result, the Federal Reserve would tighten monetary policy in order to prevent higher inflation from materialising. Similarly, in order to mitigate the inflationary pressures from the expected stronger import demand from the US, the ECB and the Bank of Japan would also tighten their monetary policy. Ex post, the monetary policy tightening in the US, the euro area and Japan would be interpreted as contractionary monetary policy shocks. Importantly, the contractionary monetary policy shocks would be positively correlated across economies, both between the US and the euro area as well as between the euro area and Japan. In this scenario, the cross-country correlation between the monetary policy shocks arises due to trade integration between the US and the rest of the world.[15] As trade and financial market integration in the data are strongly positively correlated, our baseline results in Table 7 might reflect omitted variable bias. However, our results are unchanged when we include measures of economies' overall trade integration and their bilateral trade integration with the US as additional explanatory variables (column (2) in Table 11).

4.2.2 Bilateral common component

One could also argue that the monetary policy shock estimates in our database are cross-country correlated not because they contain a common *global* component, but because they share *bilateral* components. In particular, the cross-country correlation between monetary policy shock estimates of two non-core economies could arise due to their mutual bilateral trade and financial integration in connection with similar arguments on common mis-assessments of future growth and inflation as in Section 4.2.1. However, our baseline results are unchanged if we include in the regression measures of the strength of economies' bilateral trade and financial integration (columns (3) and (4) in Table 11).[16]

4.2.3 Mis-specification of the Taylor-rule

Another alternative explanation for the cross-country correlation between the monetary policy shock estimates in our database could be mis-specification of the Taylor-rule in estimated NK DSGE models. For example, economies might be subject to fear-of-floating even in the absence of a formal peg due to currency mismatches on their external balance sheet (see Calvo and Reinhart, 2002; Eichengreen et al., 2003). In such a setting, a depreciation of the

[15] A variation of this argument is that the ECB and the Bank of Japan could actually loosen monetary policy in order to counter negative spillovers that follow from the tightening of monetary policy in the US. However, notice that also under this scenario the monetary policy shocks of the euro area and Japan would be positively correlated ex post.

[16] For bilateral trade the data are taken from the IMF's Direction of Trade Statistics and for bilateral financial integration from the IMF CPIS.

domestic currency in response to a tightening of foreign monetary policy increases the home-currency value of domestic firms' foreign liabilities denominated in foreign currency, which are—at least in emerging economies—often not matched by foreign-currency cash flows. In this case, foreign monetary policy shocks would enter directly in the true domestic monetary policy reaction function; estimates of domestic monetary policy shocks would then be contaminated by foreign monetary policy shocks if the Taylor-rule specified in the NK DSGE model does not account for the dependence of domestic on foreign monetary policy. However, our baseline results are unchanged if we enter the interaction between economies' net short position in foreign currency as an additional explanatory variable (column (5) in Table 11).[17]

4.2.4 Common global demand and supply shocks

Finally, as discussed in Section 2, the lack of financial spillover channels in standard NK DSGE models might not only give rise to a global *monetary policy* component in domestic monetary policy shock estimates, but the common component might also consist of global demand and supply shocks. Under this hypothesis, we would expect the global component in the domestic monetary policy shock estimates to be less strongly correlated for economies that are more heterogeneous regarding their susceptibility to spillovers from a range of shocks. In order to test this competing hypothesis, we consider additional explanatory variables that reflect the heterogeneity of economies along a number of dimensions in the regression of Equation (4). Specifically, we enter the absolute value of the differences in economies' (i) overall trade integration with the rest of world, (ii) centrality in the global trade network, (iii) position and participation in global value chains, as well as their (iv) output, export and import structures.[18] However, the results in Table 12 are mostly not consistent with the hypothesis that the positive cross-country correlations in the monetary policy shock estimates obtained from NK DSGE models stems from a common global supply or demand shock: In general, more heterogeneous pairs of economies do not exhibit lower cross-country correlations. More importantly, our baseline results for the role of the susceptibility to financial spillovers are unchanged.

[17]The data on net foreign currency exposures are taken from Benetrix et al. (2015).

[18]The measure for the heterogeneity of economies' sectoral composition is the sum of the squared differences between two economies' output shares accounted for by a particular sector; for each sector, the squared difference is weighted by the share of that sector in global output. Global value chain participation and position are measures based on indirect and foreign value added. The data are taken from the World Input-Output Database (WIOD; Timmer et al., 2015). We use real GDP per capita and geographic variables in order to impute the observations on the measure of sectoral composition and global value chain properties for economies in our sample which are not available in the WIOD. Data on the centrality in the global trade network are taken from CEPII.

4.3 Robustness

4.3.1 Alternative samples

It is also worthwhile to slice our sample along several dimensions in order to explore the sensitivity of our results. First, one could argue that most of the NK DSGE model monetary policy shock estimates in our database stem from parsimonious academic models that are meant to shed light on a particular transmission channel rather than to produce accurate estimates of the true monetary policy shocks. However, our results are unchanged if we restrict the sample to cross-country correlations between monetary policy shock estimates that are obtained from large and more sophisticated NK DSGE models used at central banks and international organisations for policy advice (column (2) in Table 13). In fact, the average cross-country correlation is noticeably larger for monetary policy shock estimates that stem from structural models used at central banks and international organisations.[19]

Almost a third of the cross-country correlations in our sample involves monetary policy shock estimates from the 40-country NK DSGE model of Vitek (2014). In order to ensure that our results are not driven by the monetary policy shock estimates from one particular model, we exclude the shocks from Vitek (2014) from the regression sample (column (3) in Table 13). The results suggest that the relationship between the cross-country correlations and economies' susceptibility to financial spillovers found in our baseline results is not driven by the monetary policy shock estimates from Vitek (2014).

Recall that in our baseline regression sample we only include economies for which we have at least three time series of monetary policy shock estimates and cross-country correlations which are calculated on the basis of at least 16 time series observations. However, our results do not change when we consider a sample which includes cross-country correlations of all NK DSGE model monetary policy shock estimates in our database (column (4) in Table 13).

One might argue that we should not base our findings on monetary policy shock estimates obtained from studies which have not undergone peer review processes, as these might not meet the quality standards of the profession. The results reported in Table 14 indicate that our results are not driven by monetary policy shock estimates from non-peer-reviewed studies. Whether we consider only monetary policy shock estimates from studies that have been published in some journal or from studies which have been published in journals ranked

[19] The average cross-country correlation for monetary policy shock estimates from the NK DSGE models in our database that are used at central banks and international organisations is 0.097, while for the remaining NK DSGE models the average correlation is 0.046. This difference is mostly due to differences between the sets of country-pairs included in the baseline sample and the central bank/international organisations sample: The average cross-country correlation between the monetary policy shock estimates obtained from academic NK DSGE models is 0.086 when only those country-pairs for which we also have shock estimates from models used at central banks or international organisations are considered.

above a certain "Keele"-list threshold, our baseline results are—in particular taking into account the substantial reduction in the sample—confirmed.

4.3.2 Alternative model specifications

In our baseline specification for the dependent variable we include cross-country correlations regardless of whether or not they are statistically significantly different from zero. However, our results are robust to setting the cross-country correlations ρ_{ℓ_i,m_j} on the left-hand side in Equation (4) which are not statistically significantly different from zero at the 10% significance level to zero (column (2) in Table 15).

One could also argue that our estimation could be inconsistent as our dependent variable is bounded between minus/plus unity, which is not accounted for by a linear regression. A common approach to circumvent this is to consider the logit transformation of the dependent variable. Our results are not sensitive to this variation of the regression specification (column (3) in Table 15).

We also consider a more general but significantly more strongly parameterised specification with shock-country instead of country fixed effects in Equation (4) by estimating

$$\rho_{\ell_i,m_j} = \alpha_{\ell_i} + \gamma_{m_j} + \boldsymbol{x}_{ij} \cdot \boldsymbol{\beta} + u_{\ell_i,m_j}. \tag{5}$$

Column (4) in Table 15 documents that our results are unchanged for this alternative regression specification.

Robust (median) regression in column (5) that accounts for possible outliers delivers results which are unchanged relative to the baseline.

Our baseline measure of economies' susceptibility to financial spillovers—the product of their financial integration—might be too crude to adequately capture asymmetries in the contamination of domestic monetary policy shock estimates by a global component. Specifically, consider two country pairs. In the first country pair, both economies are moderately susceptible to financial spillovers from abroad. In the second country pair, one economy is very susceptible to financial spillovers, while the second economy is almost completely insulated from global financial markets. Now, while the product of economies' susceptibility to financial spillovers might be similar for both country pairs, we should expect different cross-country correlations between their monetary policy shock estimates obtained from NK DSGE models. In particular, because in the second country pair one economy is essentially immune to financial spillovers in the data its monetary policy shock estimates should not be contaminated by a common global component; as a result, regardless of how severely contaminated the monetary policy shock estimates of the other economy are, the cross-country correlation should be zero. Put differently, while taking the product between economies' susceptibility to financial spillovers as explanatory variables does account for non-linearities, it might be that multiplication features too little curvature in order to capture consistently the relationship between economies' combined susceptibility to financial spillovers and the extent of mis-measurement of the monetary policy shocks. Therefore, as an alternative we consider the minimum of the values of the two economies' susceptibility to financial spillovers. The results in column (6) are unchanged compared to the baseline.

Finally, to the extent that we have monetary policy shock estimates from several NK DSGE models for a given economy in our database, the sample we consider for the regression of Equation (4) in the baseline in general includes a different number of observations on cross-country correlations for country pair (i, j) than country pair (m, ℓ). One reason we choose this specification is that it implies a weighting of observations: A larger number of monetary policy shock estimates exists for economies which have been studied more intensively and for which data are more readily available; country pairs involving one ore both of these economies receive a greater weight in our baseline regression. However, one might want to ensure that our results are not driven by such an implicit weighting. Therefore, as yet another alternative specification, we consider as dependent variable in Equation (4) observations of the cross-country correlations ρ_{ℓ_i,m_j} averaged within country pairs. However, our results do not change if we consider this alternative specification, at least for the overall susceptibility to financial spillovers (column (5) in Table 13).

4.3.3 US vs. euro area as core economy

Finally, one may wonder if the common global component in domestic monetary policy shock estimates exclusively reflects a US component. In particular, for the many European economies in our sample the common component may also be driven by a euro area component. Column (2) in Table 16 reports results from a regression of Equation (4) in which we drop the cross-country correlations for country pairs that involve the euro area; we also enter as additional explanatory variable the share of economies' overall financial integration accounted for by the euro area. Essentially, we hereby allow both the US and the euro area to represent core economies. The results for the coefficient estimate on economies' overall financial integration are unchanged. However, the coefficient estimate on the share of economies' overall financial integration accounted for by the US is not statistically significant anymore, while that for the euro area is. These results possibly raise some doubts concerning the unique role of the US in driving a global financial cycle as well as the common component in the NK DSGE model monetary policy shock estimates in our database. However, it is difficult to determine whether this finding is due to the euro area being a more important driver of the global financial cycle than the US or a bias in the sample composition towards European economies based on our database of monetary policy shock estimates. In any case, these results are still consistent with the hypothesis that the NK DSGE model monetary policy shock estimates in our database are contaminated by a common—even if not necessarily a US—component.

5 Conclusion

In this paper we provide evidence that is consistent with the hypothesis that many estimated NK DSGE models in the literature erroneously label foreign monetary policy shocks as domestic ones because they fail to adequately account for financial spillovers in the data. Specifically, we document that there is a statistically and economically significant, positive cross-country correlation between monetary policy shock estimates obtained from NK DSGE models. Also, the correlations are larger for pairs of economies which are more susceptible to financial spillovers in the data, as measured by their financial integration with the rest of the world and the US. Finally, we document that shock estimates from NK DSGE models imply large and implausibly similar estimates for the global output spillovers from monetary policy in a range of economies, such as the US, the euro area and the UK. The insights from this paper suggest that if NK DSGE models are to be used for policy advice, they should feature powerful financial spillover channels. Models without such elements are likely to provide misleading historical decompositions and inconsistent parameter estimates.

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References

Adame, F., Carrillo, J., Roldan-Pena, J., Zerecero, M., 2016. Financial Considerations in a Small Open Economy Model for Mexico. mimeo.

Adolfson, M., Laséen, S., Christiano, L., Trabandt, M., Walentin, K., 2013. RAMSES II - Model Description. Sveriges Riksbank Occasional Paper 12.

Adolfson, M., Laséen, S., Lindé, J., Svensson, L. E. O., 2011. Optimal monetary policy in an operational medium-sized DSGE model. Board of Governors of the Federal Reserve System International Finance Discussion Papers 1023.

Aguilar, P., Vzquez, J., 2015. The Role of Term Structure in an Estimated DSGE Model with Learning. Université Catholique de Louvain Institut de Recherches Economiques et Sociales Discussion Paper 2015007.

Albonico, A., Paccagnini, A., Tirelli, P., 2014. Estimating a DSGE Model with Limited Asset Market Participation for the Euro Area. University of Milano-Bicocca Department of Economics Working Papers 286.

Albonico, A., Paccagnini, A., Tirelli, P., forthcoming. In Search of the Euro Area Fiscal Stance. Journal of Empirical Finance.

Alp, H., Elekdag, S., 2013. The Role of Monetary Policy in Turkey During the Global Financial Crisis. In: Braude, J., Eckstein, Z., Fischer, S., Flug, K. (Eds.), The Great Recession: Lessons for Central Bankers. MIT Press, pp. 51–80.

Alp, H., Elekdag, S., Lall, S., 2012. Did Korean Monetary Policy Help Soften the Impact of the Global Financial Crisis of 2008-2009? IMF Working Paper 12/5.

Alpanda, S., Aysun, U., 2014. International Transmission of Financial Shocks in an Estimated DSGE Model. Journal of International Money and Finance 47 (C), 21–55.

Ambrisko, R., Babecky, J., Rysanek, J., Valenta, V., 2015. Assessing the Impact of Fiscal Measures on the Czech Economy. Economic Modelling 44 (C), 350–357.

Andreasen, M., 2012. An Estimated DSGE Model: Explaining Variation in Nominal Term Premia, Real Term Premia, and Inflation Risk Premia. European Economic Review 56 (8), 1656–1674.

Andrle, M., 2014. Estimating Structural Shocks with DSGE Models. mimeo.

Argov, E., Barnea, E., Binyamini, A., Borenstein, E., Elkayam, D., Rozenshtrom, I., 2012. MOISE: A DSGE Model for the Israeli Economy. Bank of Israel Discussion Paper 2012.06.

Assenmacher-Wesche, K., 2008. Modeling Monetary Transmission in Switzerland with a Structural Cointegrated VAR Model. Swiss Journal of Economics and Statistics (SJES) 144, 197–246.

Avouyi-Dovi, S., Sahuc, J.-G., 2016. On the Sources of Macroeconomic Stability in the Euro Area. European Economic Review 83 (C), 40–63.

Azoulay, E., Ribon, S., 2010. A Basic Structural VAR of Monetary Policy in Israel Using Monthly Frequency Data. Bank of Israel Discussion Paper (2010.04).

Bacchiocchi, E., Castelnuovo, E., Fanelli, L., 2014. Gimme a Break! Identification and Estimation of the Macroeconomic Effects of Monetary Policy Shocks in the US. Dipartimento di Scienze Economiche "Marco Fanno" Working Paper 0181.

Bacchiocchi, E., Fanelli, L., 2015. Identification in Structural Vector Autoregressive Models with Structural Changes, with an Application to US Monetary Policy. Oxford Bulletin of Economics and Statistics 77 (6), 761–779.

Banerjee, R., Devereux, M., Lombardo, G., 2015. Self-Oriented Monetary Policy, Global Financial Markets and Excess Volatility of International Capital Flows. NBER Working Paper 21737.

Banerjee, R., Devereux, M., Lombardo, G., 2016. Self-Oriented Monetary Policy, Global Financial Markets and Excess Volatility of International Capital Flows. Journal of International Money and Finance 68, 275–297.

Barakchian, M., Crowe, C., 2013. Monetary Policy Matters: Evidence from New Shocks Data. Journal of Monetary Economics 60 (8), 950–966.

Baranowski, P., Gorajski, M., Malaczewski, M., Szafranski, G., 2013. Inflation in Poland under State-dependent Pricing. Aboa Centre for Economics Discussion Paper 83.

Barigozzi, M., Conti, A. M., Luciani, M., October 2014. Do Euro Area Countries Respond Asymmetrically to the Common Monetary Policy? Oxford Bulletin of Economics and Statistics 76 (5), 693–714.

Barnett, W., Bhadury, S., Ghosh, T., 2015. An SVAR Approach to Evaluation of Monetary Policy in India: Solution to the Exchange Rate Puzzles in an Open Economy 201503.

Bekaert, G., Hoerova, M., Lo Duca, M., 2013. Risk, Uncertainty and Monetary Policy. Journal of Monetary Economics 60 (7), 771–788.

Beltran, D., Draper, D., 2008. Estimating the Parameters of a Small Open-Economy DSGE Model: Identifiability and Inferential Validity. International Finance Discussion Papers 955.

Benchimol, J., 2016. Money and Monetary Policy in Israel During the Last Decade. Journal of Policy Modeling 38 (1), 103–124.

Benchimol, J., Fourcans, A., forthcoming. The Role of Money and Monetary Policy in Crisis Periods: The Euro Area Case. Macroeconomic Dynamics.

Benetrix, A., Lane, P., Shambaugh, J., 2015. International Currency Exposures, Valuation Effects and the Global Financial Crisis. Journal of International Economics 96 (S1), 98–209.

Benkovskis, K., Bessonovs, A., Feldkircher, M., Wörz, J., 2011. The Transmission of Euro Area Monetary Shocks to the Czech Republic, Poland and Hungary: Evidence from a FAVAR Model. Focus on European Economic Integration (3), 8–36.

Bernanke, B., 1986. Alternative Explanations of the Money-income Correlation. Carnegie-Rochester Conference Series on Public Policy 25 (1), 49–99.

Bernanke, B., Boivin, J., Eliasz, P., 2005. Measuring the Effects of Monetary Policy: A Factor-Augmented Vector Autoregressive (FAVAR) Approach. Quarterly Journal of Economics 120 (1), 387–422.

Bernanke, B., Kuttner, K., 2005. What Explains the Stock Market's Reaction to Federal Reserve Policy? Journal of Finance 60 (3), 1221–1257.

Bernanke, B., Mihov, I., 1998. Measuring Monetary Policy. The Quarterly Journal of Economics 113 (3), 869–902.

Binder, M., Chen, Q., Zhang, X., 2010. On the Effects of Monetary Policy Shocks on Exchange Rates. CESifo Working Paper 3162.

Bjørnland, H., Jacobsen, D., 2010. The Role of House Prices in the Monetary Policy Transmission Mechanism in Small Open Economies. Journal of Financial Stability 6 (4), 218–229.

Blanchard, O., 2016. Do DSGE Models Have a Future? PIIE Policy Brief PB16-11.

Boivin, J., Giannoni, M., Mojon, B., December 2009. How Has the Euro Changed the Monetary Transmission Mechanism? In: NBER Macroeconomics Annual 2008, Volume 23. NBER Chapters. National Bureau of Economic Research, pp. 77–125.

Bong, K. S., Doh, T., Park, W. Y., 2016. Yield Curve and Monetary Policy Expectations in Small Open Economies. Federal Reserve Bank of Kansas City Working Paper 14-13.

Brayton, F., Laubach, T., Reifschneider, D., 2014. The FRB/US Model: A Tool for Macroeconomic Policy Analysis. FEDS Notes 2014-11-21, Board of Governors of the Federal Reserve System.

Breuss, F., Fornero, J., 2009. An Estimated DSGE Model of Austria, the Euro Area and the US: Some Welfare Implications of EMU. FIW Working Paper 034.

Bruno, V., Shin, H. S., 2015a. Capital Flows and the Risk-taking Channel of Monetary Policy. Journal of Monetary Economics 71 (C), 119–132.

Bruno, V., Shin, H. S., 2015b. Cross-Border Banking and Global Liquidity. Review of Economic Studies 82 (2), 535–564.

Brzoza-Brzezina, M., Makarski, K., 2011. Credit crunch in a small open economy. Journal of International Money and Finance 30 (7), 1406–1428.

Burgess, S., Fernandez-Corugedo, E., Groth, C., Harrison, R., Monti, F., Theodoridis, K., Waldron, M., 2013. The Bank of England's Forecasting Platform: COMPASS, MAPS, EASE and the Suite of Models. Bank of England Working Paper 471.

Caglayan, M., Kandemir Kocaaslan, O., Mouratidis, K., 2016. Financial Depth and the Asymmetric Impact of Monetary Policy. Oxford Bulletin of Economics and Statistics.

Calvo, G., Reinhart, C., 2002. Fear of Floating. The Quarterly Journal of Economics 117 (2), 379–408.

Canova, F., 2005. The Transmission of US Shocks to Latin America. Journal of Applied Econometrics 20 (2), 229–251.

Caputo, R., Medina, J.-P., Soto, C., 2008. The MAS: A DSGE Model for Chile Implementation and Forecasting. mimeo.

Carabenciov, I., Ermolaev, I., Freedman, C., Juillard, M., Kamenik, O., Korshunov, D., Laxton, D., Laxton, J., 2008. A Small Quarterly Multi-Country Projection Model with Financial-Real Linkages and Oil Prices. IMF Working Paper 08/208.

Carlstrom, C., Fuerst, T., Ortiz, A., Paustian, M., 2014. Estimating Contract Indexation in a Financial Accelerator Model. Journal of Economic Dynamics and Control 46 (C), 130–149.

Ca'Zorzi, M., Kolasa, M., Rubaszek, M., 2016. Exchange Rate Forecasting with DSGE Models. ECB Working Paper 1905.

Cesa-Bianchi, A., Thwaites, G., Vicondoa, A., 2016. Monetary Policy Transmission in an Open Economy: New Data and Evidence from the United Kingdom. mimeo.

Cetorelli, N., Goldberg, L., 2012. Banking Globalization and Monetary Transmission. Journal of Finance 67 (5), 1811–1843.

Chen, J., Columba, F., 2016. Macroprudential and Monetary Policy Interactions in a DSGE Model for Sweden. IMF Working Paper 16/74.

Chen, Q., Filardo, A., He, D., Zhu, F., 2016. Financial Crisis, US Unconventional Monetary Policy and International Spillovers. Journal of International Money and Finance 67 (C), 62–81.

Chen, X., Macdonald, R., 2012. Realized and Optimal Monetary Policy Rules in an Estimated MarkovSwitching DSGE Model of the United Kingdom. Journal of Money, Credit and Banking 44 (6), 1091–1116.

Chin, M., Filippeli, T., Theodoridis, K., 2015. Cross-country Co-movement in Long-term Interest Rates: A DSGE Approach. Bank of England Working Paper 530.

Chinn, M., Ito, H., 2006. What Matters for Financial Development? Capital Controls, Institutions, and Interactions. Journal of Development Economics 81 (1), 163–192.

Christiano, L., Eichenbaum, M., Evans, C., 1999. Monetary Policy Shocks: What Have We Learned and to What End? In: Taylor, J. B., Woodford, M. (Eds.), Handbook of Monetary Economics. Amsterdam: Elsevier Science, pp. 65–148.

Christiano, L. J., Eichenbaum, M., Evans, C. L., 2005. Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy. Journal of Political Economy 113 (1), 1–45.

Christiano, L. J., Motto, R., Rostagno, M., 2014. Risk Shocks. American Economic Review 104 (1), 27–65.

Christoffel, K., Coenen, G., Warne, A., 2008. The New Area-Wide Model of the Euro Area: A Micro-Founded Open-Economy Model for Forecasting and Policy Analysis. ECB Working Paper 0944.

Chung, H., Kiley, M., Laforte, J.-P., 2010. Documentation of the Estimated, Dynamic, Optimization-based (EDO) model of the U.S. economy: 2010 Version. Board of Governors of the Federal Reserve System Finance and Economics Discussion Series 2010-29.

Cihak, M., Demirguc-Kunt, A., Feyen, E., Levine, R., 2012. Benchmarking Financial Systems Around the World. World Bank Policy Research Working Paper 6175.

Claus, E., Claus, I., Krippner, L., 2016. Monetary Policy Spillovers across the Pacific when Interests are at the Zero Lower Bound. Asian Economic Papers 15 (3), 1–27.

Claus, E., Dungey, M., 2012. US Monetary Policy Surprises: Identification with Shifts and Rotations in the Term Structure. Journal of Money, Credit and Banking 44 (7), 1443–1453.

Claus, E., Dungey, M., 2016. Can Monetary Policy Surprises Affect the Term Structure? Journal of Macroeconomics 47, 68–83.

Cloyne, J., Hürtgen, P., forthcoming. The Macroeconomic Effects of Monetary Policy: A New Measure for the United Kingdom. American Economic Journal: Macroeconomics.

Coenen, G., Wieland, V., 2002. Inflation Dynamics and International Linkages: A Model of the United States, the Euro Area and Japan. ECB Working Paper 0181.

Copaciu, M., Nalban, V., Bulete, C., 2016. R.E.M. 2.0 - A DSGE Model with Partial Euroization Estimated for Romania. National Bank of Romania Occasional Papers 21.

Cuche-Curti, N., Dellas, H., Natal, J.-M., 2009. A Dynamic Stochastic General Equilibrium Model for Switzerland. Swiss National Bank Economic Studies 2009-05.

Dai, L., Minford, P., Zhou, P., 2015. A DSGE Model of China. Applied Economics 47 (59), 6438–6460.

de Carvalho, F. A., Castro, M. R., May 2015. Foreign Capital Flows, Credit Growth and Macroprudential Policy in a DSGE Model with Traditional and Matter-of-Fact Financial Frictions. Central Bank of Brazil, Research Department Working Paper Series (387).

de Carvalho, F. A., Castro, M. R., Costa, S. M. A., 2014. Traditional and Matter-of-fact Financial Frictions in a DSGE Model for Brazil: The Role of Macroprudential Instruments and Monetary Policy.

de Carvalho, F. A., Valli, M., Apr. 2011. Fiscal Policy in Brazil through the Lens of an Estimated DSGE Model. Central Bank of Brazil, Research Department Working Paper (240).

de Menezes Linardi, F., 2016. Assessing the Fit of a Small Open-economy DSGE Model for the Brazilian Economy. Central Bank of Brazil WOrking Paper 424.

Dedola, L., Lombardo, G., 2012. Financial Frictions, Financial Integration and the International Propagation of Shocks. Economic Policy 27 (70), 319–359.

Dedola, L., Rivolta, G., Stracca, L., 2015. When the Fed Sneezes, Who Gets a Cold? mimeo.

Devereux, M., Yetman, J., 2010. Leverage Constraints and the International Transmission of Shocks. Journal of Money, Credit and Banking 42 (s1), 71–105.

di Giovanni, J., Shambaugh, J., 2008. The Impact of Foreign Interest Rates on the Economy: The Role of the Exchange Rate Regime. Journal of International Economics 74 (2), 341–361.

Dorich, J., Johnston, M., Mendes, R., Murchison, S., Zhang, Y., 2013. ToTEM II: An Updated Version of the Bank of Canada's Quarterly Projection Model. Technical Reports 100, Bank of Canada.

Drygalla, A., 2015. Switching to Exchange Rate Flexibility? The Case of Central and Eastern European Inflation Targeters. FIW Working Paper 139.

Dungey, M., Osborn, D., 2014. Modelling Large Open Economies With International Linkages: The Usa And Euro Area. Journal of Applied Econometrics 29 (3), 377–393.

Dungey, M., Osborn, D., Raghavan, M., 2014. International Transmissions to Australia: The Roles of the USA and Euro Area. The Economic Record 90 (291), 421–446.

Ehrmann, M., Fratzscher, M., 2003. Monetary Policy Announcements and Money Markets: A Transatlantic Perspective. International Finance 6 (3), 309–28.

Ehrmann, M., Fratzscher, M., 2005. Equal Size, Equal Role? Interest Rate Interdependence Between the Euro Area and the United States. Economic Journal 115 (506), 928–948.

Ehrmann, M., Fratzscher, M., 2009. Global Financial Transmission of Monetary Policy Shocks. Oxford Bulletin of Economics and Statistics 71 (6), 739–759.

Ehrmann, M., Fratzscher, M., Rigobon, R., 2011. Stocks, Bonds, Money Markets and Exchange Rates: Measuring International Financial Transmission. Journal of Applied Econometrics 26 (6), 948–974.

Eichengreen, B., Hausmann, R., Panizza, U., 2003. Le péché originel: Le calvaire, le mystère et le chemin de la rédemption. L'Actualité Economique 79 (4), 419–455.

Ellis, C., Mumtaz, H., Zabczyk, P., 05 2014. What Lies Beneath? A Time-varying FAVAR Model for the UK Transmission Mechanism. Economic Journal 124 (576), 668–699.

Errit, G., Uusküla, L., 2014. Euro Area Monetary Policy Transmission in Estonia. Baltic Journal of Economics 14 (1-2), 55–77.

Faccini, R., Millard, S., Zanetti, F., 2013. Wage Rigidities in an Estimated Dynamic, Stochastic, General Equilibrium Model of the UK Labour Market. The Manchester School 81, 66–99.

Felcser, D., Vonnak, B., 2014. Carry Trade, Uncovered Interest Parity and Monetary Policy. MNB Working Papers 2014/3.

Feldkircher, M., Huber, F., 2015. The International Transmission of US Structural Shocks: Evidence from Global Vector Autoregressions. European Economic Review 81, 167–188.

Feldkircher, M., Huber, F., 2016. The International Transmission of US Shocks: Evidence from Bayesian Global Vector Autoregressions. European Economic Review 81 (C), 167–188.

Fernández, A., Klein, M., Rebucci, A., Schindler, M., Uribe, M., 2015. Capital Control Measures: A New Dataset. NBER Working Paper 20970.

Fève, P., Sahuc, J.-G., 2016. In Search of the Transmission Mechanism of Fiscal Policy in the Euro Area. Journal of Applied Econometrics.

Forni, M., Gambetti, L., 2010. The Dynamic Effects of Monetary Policy: A Structural Factor Model Approach. Journal of Monetary Economics 57 (2), 203–216.

Fragetta, M., Melina, G., 2013. Identification of Monetary Policy in SVAR Models: A Data-oriented Perspective. Empirical Economics 45 (2), 831–844.

Fueki, T., Fukunaga, I., Ichiue, H., Shirota, T., 2016. Measuring Potential Growth with an Estimated DSGE Model of Japan's Economy. International Journal of Central Banking 12 (1), 1–32.

Furlanetto, F., Gelain, P., Sanjani, M., 2014. Output Gap in Presence of Financial Frictions and Monetary Policy Trade-offs. IMF Working Paper 14/128.

Gabriel, V., Levine, P., , Yang, B., 2016. An Estimated DSGE Open-Economy Model of the Indian Economy with Financial Frictions. In: Ghate, C., Kletzer, K. (Eds.), Monetary Policy in India: A Modern Macroeconomic Perspective. Springer.

Gabriel, V., Levine, P., Pearlman, J., Yang, B., 2012. An Estimated DSGE Model of the Indian Economy. In: Ghate, C. (Ed.), Oxford Handbook of the Indian Economy. Oxford University Press.

Gadatsch, N., Hauzenberger, K., Stähler, N., 2016. Fiscal Policy During the Crisis: A Look on Germany and the Euro Area with GEAR. Economic Modelling 52 (PB), 997–1016.

Galí, J., Gambetti, L., 2015. The Effects of Monetary Policy on Stock Market Bubbles: Some Evidence. American Economic Journal: Macroeconomics 7 (1), 233–57.

Gallic, E., Vermandel, G., 2016. Climate Shocks and Business Cycles. mimeo.

Garcia, C., Gonzalez, W., 2014. Why Does Monetary Policy Respond to the Real Exchange Rate in Small Open Economies? A Bayesian Perspective. Empirical Economics 46 (3), 789–825.

Gelain, P., 2010. The External Finance Premium in the Euro Area: A Dynamic Stochastic General Equilibrium Analysis. The North American Journal of Economics and Finance 21 (1), 49–71.

Georgiadis, G., 2016. Determinants of Global Spillovers from US Monetary Policy. Journal of International Money and Finance 67, 41–61.

Georgiadis, G., forthcoming. Determinants of Global Spillovers from US Monetary Policy. Journal of International Money and Finance.

Gerali, A., Neri, S., Sessa, L., Signoretti, F. M., 2010. Credit and Banking in a DSGE Model of the Euro Area. Journal of Money, Credit and Banking 42 (1), 107–141.

Gertler, M., Karadi, P., 2011. A Model of Unconventional Monetary Policy. Journal of Monetary Economics 58 (1), 17–34.

Gertler, M., Karadi, P., 2015. Monetary Policy Surprises, Credit Costs, and Economic Activity. American Economic Journal: Macroeconomics 7 (1), 44–76.

Gertler, M., Sala, L., Trigari, A., 2008. An Estimated Monetary DSGE Model with Unemployment and Staggered Nominal Wage Bargaining. Journal of Money, Credit and Banking 40 (8), 1713–1764.

Gervais, O., Gosselin, M.-A., 2014. Analyzing and Forecasting the Canadian Economy through the LENS Model. Technical Reports 102, Bank of Canada.

Ghosh, A., Qureshi, M., Kim, J., Zalduendo, J., 2014. Surges. Journal of International Economics 92 (2), 266–285.

Giri, F., 2014. Does Interbank Market Matter for Business Cycle Fluctuation? An Estimated DSGE Model with Financial Frictions for the Euro Area. Universita' Politecnica delle Marche Dipartimento di Scienze Economiche e Sociali Working Paper 398.

Goldberg, L., 2009. Understanding Banking Sector Globalization. IMF Staff Papers 56 (1), 171–197.

Gonzalez, A., Hamann, F., Rodriguez, D., 2015. Macroprudential Policies in a Commodity Exporting Economy. BIS Working Paper 506.

Grabek, G., Klos, B., 2013. Unemployment in the Estimated New Keynesian SoePL-2012 DSGE Model. National Bank of Poland Working Paper 144.

Gupta, R., Steinbach, R., 2013. A DSGE-VAR Model for Forecasting Key South African Macroeconomic Variables. Economic Modelling 33, 19–33.

Hale, G., Kapan, T., Minoiu, C., 2016. Crisis Transmission in the Global Banking Network. IMF Working Paper 16/91.

Harrison, R., Oomen, O., 2010. Evaluating and Estimating a DSGE Model for the United Kingdom. Bank of England Working Paper 380.

Heinlein, R., Krolzig, H.-M., 2013. Monetary Policy and Exchange Rates: A Balanced Two-Country Cointegrated VAR Model Approach 1321.

Herber, P., Nemec, D., 2009. Estimating Output Gap in the Czech Republic: DSGE Approach. Mathematical Methods in Economics 8, 117–124.

Herber, P., Nemec, D., 2012. Investigating Structural Differences of the Czech Economy: Does Asymmetry of Shocks Matter? Bulletin of the Czech Econometric Society 19 (29).

Hernan Hernandez, M., Ortiz Bolanos, A., 2016. Monetary and Fiscal Policies in Latin America: Evidence from an Estimated DSGE Model. mimeo.

Hirose, Y., 2014. An Estimated DSGE Model with a Deflation Steady State. CAMA Working Paper 2014-52.

Iacoviello, M., Minetti, R., 2006. International Business Cycles with Domestic and Foreign Lenders. Journal of Monetary Economics 53 (8), 2267–2282.

Iacoviello, M., Neri, S., 2010. Housing Market Spillovers: Evidence from an Estimated DSGE Model. American Economic Journal: Macroeconomics 2 (2), 125–64.

Ilzetzki, E., Reinhart, C., Rogoff, K., 2010. Exchange Rate Arrangements Entering the 21st Century: Which Anchor Will Hold? mimeo, London School of Economics.

Ito, H., 2014. Monetary Policy in Asia and the Pacific in the Post, Post-Crisis Era. mimeo.

Jacob, P., Munro, A., 2016. A Macroprudential Stable Funding Requirement and Monetary Policy in a Small Open Economy DP2016/04.

Jannsen, N., Klein, M., 2011. The International Transmission of Euro Area Monetary Policy Shocks. Kiel Institute for the World Economy Working Paper 1718.

Jiang, J., Kim, D., 2013. Is China's Monetary Policy Effective? Evaluating the VAR Evidence. China Economic Policy Review 2 (2), 1–21.

Jorda, O., 2005. Estimation and Inference of Impulse Responses by Local Projections. American Economic Review 95 (1), 161–182.

Junicke, M., 2015. Trend inflation and monetary policy in Eastern Europe. mimeo.

Justiniano, A., Preston, B., 2010. Can Structural Small Open-economy Models Account for the Influence of Foreign Disturbances? Journal of International Economics 81 (1), 61–74.

Kaihatsu, S., Kurozumi, T., 2014. Sources of Business Fluctuations: Financial or Technology Shocks? Review of Economic Dynamics 17 (2), 224–242.

Kamber, G., McDonald, C., Sander, N., Theodoridis, K., 2016. Modelling the Business Cycle of a Small Open Economy: The Reserve Bank of New Zealand's DSGE Model. Economic Modelling 59, 546–569.

Kamber, G., Millard, S., December 2012. Using Estimated Models to Assess Nominal and Real Rigidities in the United Kingdom. International Journal of Central Banking 8 (4), 97–119.

Kamber, G., Smith, C., Thoenissen, C., 2015. Financial Frictions and The role of Investment-specific Technology Shocks in the Business Cycle. Economic Modelling 51, 571–582.

Kapur, M., Behera, H., 2012. Monetary Transmission Mechanism in India: A Quarterly Model. mimeo.

Kilponen, J., Orjasniemi, S., Ripatti, A., Verona, F., 2016. The Aino 2.0 Model. Bank of Finland Research Discussion Paper 16.

Kim, S., 2001. International Transmission of U.S. Monetary Policy Shocks: Evidence from VAR's. Journal of Monetary Economics 48 (2), 339–372.

Kim, T. B., 2014. Analysis on Korean Economy with an Estimated DSGE Model after 2000. KDI Journal of Economic Policy 36 (2), 1–64.

Kimura, T., Nakajima, J., 2016. Identifying Conventional and Unconventional Monetary Policy Shocks: A Latent Threshold Approach. The B.E. Journal of Macroeconomics 16 (1), 277–300.

Klein, M., Shambaugh, J., 2015. Rounding the Corners of the Policy Trilemma: Sources of Monetary Policy Autonomy. American Economic Journal: Macroeconomics 7 (4), 33–66.

Kollmann, R., Enders, Z., Müller, G., 2011a. Global banking and international business cycles. European Economic Review 55 (3), 407–426.

Kollmann, R., Pataracchia, B., Raciborski, R., Ratto, M., Roeger, W., Vogel, L., 2011b. The Post-Crisis Slump in the Euro Area and the US: Evidence from an Estimated Three-Region DSGE Model. mimeo.

Körner, J., 2015. Monetary Transmission in the Czech Republic after the Transformation. Eastern European Business and Economics Journal 1 (3), 19–47.

Kucharcukova, O., Claeys, P., Vasicek, B., 2014. Spillover of the ECB's Monetary Policy Outside the Euro Area: How Different is Conventional From Unconventional Policy? Czech National Bank Working Paper 2014/15.

Kühl, M., 2016. The effects of government bond purchases on leverage constraints of banks and non-financial firms. Bundesbank Discussion Paper (38/2016).

Lane, P. R., Milesi-Ferretti, G. M., 2007. The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970-2004. Journal of International Economics 73 (2), 223–250.

Leist, S., 2013. Driving Forces of the Swiss Output Gap. Swiss Journal of Economics and Statistics 149 (IV), 493–531.

Li, S., Spencer, A., 2015. Effectiveness of the Australian Fiscal Stimulus Package: A DSGE Analysis. Economic Record 92, 94–120.

Lopez, M., Prada, J., Rodriguez, N., 2008. Financial Accelerator Mechanism in a Small Open Economy. Banco de la Republica de Colombia Borradores de Economia 525.

Lopez, M., Rodriguez, N., 2008. Financial Accelerator Mechanism: Evidence for Colombia. Banco de la Republica de Colombia Borradores de Economia 481.

Lorenzo Burlon, Alessandro Notarpietro, M. P., 2016. Forecasting for a Large-scale Open-economy DSGE Model for the Euro Area. mimeo.

Luciani, M., 03 2015. Monetary Policy and the Housing Market: A Structural Factor Analysis. Journal of Applied Econometrics 30 (2), 199–218.

Malakhovskaya, O., Minabutdinov, A., 2014. Are Commodity Price Shocks Important? A Bayesian Estimation of a DSGE Model for Russia. International Journal of Computational Economics and Econometrics 4 (1/2), 148–180.

Melecky, M., Buncic, D., 2008. An Estimated, New Keynesian Policy Model for Australia. Economic Record 84 (264), 1–16.

Merola, R., 2015. The role of financial frictions during the crisis: An estimated DSGE model. Economic Modelling 48 (C), 70–82.

Milani, F., 2011. The Impact of Foreign Stock Markets on Macroeconomic Dynamics in Open Economies: A Structural Estimation. Journal of International Money and Finance 30 (1), 111–129.

Milani, F., Park, S. H., 2015. The Effects of Globalization on Macroeconomic Dynamics in a Trade-dependent EEconomy: The Case of Korea. Economic Modelling 48 (C), 292–305.

Minetti, R., Peng, T., 2016. Credit Policies, Macroeconomic Stability and Welfare: The Case of China. mimeo.

Miranda-Agrippino, S., 2016. Unsurprising Shocks: Information, Premia, and the Monetary Transmission. Bank of England Working Paper 626.

Miranda-Agrippino, S., Rey, H., 2015. World Asset Markets and the Global Financial Cycle. NBER Working Paper 21722.

Miyajima, K., Mohanty, M., Yetman, J., 2014. Spillovers of US Unconventional Monetary Policy to Asia: The Role of Long-term Interest Rates. BIS Working Paper 478.

Morais, B., Peydro, J., Ruiz, C., 2015. The International Bank Lending Channel of Monetary Policy Rates and QE: Credit Supply, Reach-for-Yield, and Real Effects. International Finance Discussion Papers 1137.

Mumtaz, H., Theophilopoulou, A., 2016. The Impact of Monetary Policy on Inequality in the UK: An Empirical Analysis. Queen Mary University of London Working Paper 738.

Naraidoo, R., Paya, I., 2012. Forecasting Monetary Policy Rules in South Africa. International Journal of Forecasting 28 (2), 446–455.

Ncube, M., Ndou, E., 2011. Monetary Policy Transmission, House Prices and Consumer Spending in South Africa: An SVAR Approach. African Development Bank Working Paper 317.

Ncube, M., Ndou, E., 2013. Monetary Policy and Exchange Rate Shocks on South African Trade Balance. African Development Bank Working Paper 448.

Neuenkirch, M., 2013. Monetary Policy Transmission in Vector Autoregressions: A New Approach Using Central Bank Communication. Journal of Banking & Finance 37 (11), 4278–4285.

Nguyen, A., 2015. Financial Frictions and the Volatility of Monetary Policy in a DSGE Model. Lancaster University Management School Economics Department Working Paper 2015/006.

Nobili, A., Neri, S., 2006. The Transmission of Monetary Policy Shocks from the US to the Euro Area. Bank of Italy Temi di Discussione 606.

Nuguer, V., 2016. Financial Intermediation in a Global Environment. International Journal of Central Banking 12.

Obstfeld, M., 2015. Trilemmas and Trade-offs: Living with Financial Globalisation. BIS Working Paper 480.

Obstfeld, M., Rogoff, K., 1996. Foundations of International Macroeconomics. No. 0262150476. The MIT Press.

Obstfeld, M., Shambaugh, J., Taylor, A., 2005. The Trilemma in History: Tradeoffs Among Exchange Rates, Monetary Policies, and Capital Mobility. The Review of Economics and Statistics 87 (3), 423–438.

Paetz, M., Gupta, R., 2016. Stock Price Dynamics and the Business Cycle in an Estimated DSGE Model for South Africa. Journal of International Financial Markets, Institutions and Money 18 (1), 166–182.

Passari, E., Rey, H., 2015. Financial Flows and the International Monetary System. Economic Journal 125 (584), 675–698.

Patra, M., Kapur, M., 2012. A Monetary Policy Model for India. Macroeconomics and Finance in Emerging Market Economies 5 (1), 18–41.

Peersman, G., Smets, F., 2001. The Monetary Transmission Mechanism in the Euro Area: More Evidence from VAR Analysis. ECB Working Paper 91.

Pop, R.-E., 2016. A Small-scale DSGE-VAR Model for the Romanian Economy. Economic Modelling.

Poutineau, J.-C., Vermandel, G., 2015a. Cross-border Banking Flows Spillovers in the Eurozone: Evidence from an Estimated DSGE Model. Journal of Economic Dynamics and Control 51, 378–403.

Poutineau, J.-C., Vermandel, G., 2015b. Financial Frictions and the Extensive Margin of Activity. Research in Economics 69 (4), 525–554.

Poutineau, J.-C., Vermandel, G., 2016. Global Banking and the Conduct of Macroprudential Policy in a Monetary Union. mimeo.

Pragidis, I., Gogas, P., Tabak, B., 2013. Asymmetric Effects of Monetary Policy in the US and Brazil. Democritus University of Thrace Research Papers in Economics 7-2013.

Quinn, D., Toyoda, M., 2008. Does Capital Account Liberalization Lead to Growth? Review of Financial Studies 21 (3), 1403–1449.

Quint, D., Rabanal, P., 2014. Monetary and Macroprudential Policy in an Estimated DSGE Model of the Euro Area. International Journal of Central Banking 10 (2), 169–236.

Raghavan, M., Athanasopoulos, G., Silvapulle, P., 2016. Canadian Monetary Policy Analysis Using a Structural VARMA Model. Canadian Journal of Economics 49 (1).

Razafindrabe, T., 2016. A Multi-country DSGE Model with Incomplete Exchange Rate Pass-through: An Application for the Euro-area. Economic Modelling 52, 78–100.

Rees, D., Smith, P., Hall, J., 2016. A Multi-sector Model of the Australian Economy. Economic Record 92 (298), 374–408.

Rey, H., 2015. Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence. NBER Working Paper 21162.

Robstad, Ø., 2014. House Prices, Credit and the Effect of Monetary Policy in Norway: Evidence from Structural VAR Models. Norges Bank Working Paper 2014/05.

Roman, S., 2013. Optimal Economic Policy and Oil Prices Shocks in Russia. EERC Working Papers 13/03.

Romer, C., Romer, D., 2004. A New Measure of Monetary Shocks: Derivation and Implications. American Economic Review 94 (4), 1055–1084.

Rossi, B., Zubairy, S., 2011. What Is the Importance of Monetary and Fiscal Shocks in Explaining U.S. Macroeconomic Fluctuations? Journal of Money, Credit and Banking 43 (6), 1247–1270.

Rudolf, B., Zurlinden, M., 2014. A Compact Open-Economy DSGE Model for Switzerland. Swiss National Bank Economic Studies 2014-08.

Rychalovska, Y., 2013. The Implications of Financial Frictions and Imperfect Knowledge in the Estimated DSGE Model of the US Economy. CERGE-EI Working Paper 482.

Rysanek, J., Tonner, J., Tvrz, S., Vasicek, O., 2012. Monetary Policy Implications of Financial Frictions in the Czech Republic. Czech Journal of Economics and Finance 62 (5), 413–429.

Senaj, M., Vyskrabka, M., Zeman, J., 2010. MUSE: Monetary Union and Slovak Economy Model. National Bank of Slovakia Working and Discussion Papers 1/2010.

Seneca, M., 2010. A DSGE Model for Iceland. Central bank of Iceland Working Paper 50.

Sheena, J., Wang, B., 2016. Assessing labor market frictions in a small open economy. Journal of Macroeconomics 48, 231–251.

Shulgin, A., 2014. How Much Monetary Policy Rules Do We Need to Estimate DSGE Model for Russia? Applied Econometrics 36 (4), 3–31.

Sims, C., Zha, T., 2006. Were There Regime Switches in US Monetary Policy? American Economic Review 96 (1), 54–81.

Slanicay, M., 2011. Structural Differences and Asymmetric Shocks between the Czech Economy and the Euro Area 12. Review of Economic Perspectives 11 (3), 168–192.

Slanicay, M., 2013. Business Cycle Synchronization through the Lens of a DSGE Model. Czech Journal of Economics and Finance 63 (2), 180–196.

Slanicay, M., 2016a. A Proposal for a Flexible Trend Specification in DSGE Models. Review of Economic Perspectives 16 (2), 73–85.

Slanicay, M., 2016b. Analysis of Structural Differences and Asymmetry of Shocks Between the Czech Economy and the Euro Area. Statistika Journal 96 (1), 34–49.

Smets, F., Warne, A., Wouters, R., 2013. Professional Forecasters and the Real-time Forecasting Performance of an Estimated New Keynesian Model for the Euro Area. ECB Working Paper 1571.

Smets, F., Wouters, R., 2003. An Estimated Dynamic Stochastic General Equilibrium Model of the Euro Area. Journal of the European Economic Association 1 (5), 1123–1175.

Smith, L., Galesi, A., 2011. GVAR Toolbox 1.1 User Guide. mimeo.

Steinbach, R., Mathuloe, P., Smit, B., 2009. An Open-Economy New Keynesian DSGE Model of the South African Economy 09/01.

Timmer, M., Dietzenbacher, E., Los, B., Stehrer, R., Vries, G., 08 2015. An Illustrated User Guide to the World InputOutput Database: The Case of Global Automotive Production. Review of International Economics 23 (3), 575–605.

Tonner, J., Polansky, J., Vasicek, O., 2011. Parameter Drifting in a DSGE Model Estimated on Czech Data. Czech Journal of Economics and Finance 61 (5), 510–524.

Tonner, J., Tvrz, S., Vasicek, O., 2015. Labour Market Modelling within a DSGE Approach. Czech National Bank Working Papers 2015/06.

Toroj, A., Konopczak, K., 2012. Crisis Resistance Versus Monetary Regime: A Polish Slovak Counterfactual Exercise. Central European Journal of Economic Modelling and Econometrics 4 (1), 1–22.

Tvrz, S., Vasicek, O., 2016. The Great Recession in the Non-EMU Visegrad Countries: A Nonlinear DSGE Model with Time-Varying Parameters. Czech Journal of Economics and Finance 66 (3), 207–235.

Ueda, K., 2012. Banking Globalization and International Business Cycles: Cross-border Chained Credit Contracts and Financial Accelerators. Journal of International Economics 86 (1), 1–16.

Villa, S., 2016. Financial Frictions in the Euro Area and the United States: A Bayesian Assessment. Macroeconomic Dynamics 20 (05), 1313–1340.

Vitek, F., 2014. Policy and Spillover Analysis in the World Economy: A Panel Dynamic Stochastic General Equilibrium Approach 14/200.

Vitek, F., 2015. Macrofinancial Analysis in the World Economy : A Panel Dynamic Stochastic General Equilibrium Approach. IMF Working Paper 15/227.

Voss, G., Willard, L., 2009. Monetary Policy and the Exchange Rate: Evidence from a Two-country Model. Journal of Macroeconomics 31 (4), 708–720.

Yao, W., 2012. International Business Cycles and Financial Frictions. Bank of Canada Working Paper 12-19.

A Tables

Table 1: Country Coverage of the Monetary Policy Shocks Database

	DSGE	FME	NARR	SM	VAR	Total
	.	.	.	.	.	.
AUS	8	0	0	1	4	13
BRA	6	0	0	1	0	7
CAN	6	0	0	1	3	10
CHE	6	0	0	0	1	7
CHL	3	0	0	0	1	4
CHN	4	0	0	0	1	5
COL	5	0	0	0	1	6
CZE	12	0	0	0	2	14
EAR	33	1	0	0	10	44
GBR	9	3	1	0	7	20
HUN	1	0	0	0	0	1
IND	3	0	0	2	1	6
ISL	1	0	0	0	0	1
ISR	3	0	0	0	1	4
JPN	6	0	0	1	1	8
KOR	5	0	0	0	0	5
MEX	3	0	0	0	0	3
NOR	1	0	0	0	2	3
NZL	6	0	0	0	1	7
PER	1	0	0	0	1	2
POL	7	0	0	0	2	9
ROU	1	0	0	0	0	1
RUS	5	0	0	0	0	5
SWE	4	0	0	0	3	7
THA	2	0	0	0	0	2
TUR	2	0	0	0	0	2
USA	26	5	2	3	17	53
ZAF	3	0	0	1	3	7
Total	172	9	3	10	62	256
N	256					

Table 2: Model Type Coverage of the Monetary Policy Shocks Database

	Number of shocks	Percent
DSGE	173	67.3
FME	9	3.5
NARR	3	1.2
SM	10	3.9
VAR	62	24.1
Total	257	100.0
N	257	

Table 3: Overview of US Monetary Policy Shock Time Series Estimates

Reference	Acronym	Type	Sample period	MC	FS	SOE	SOE w i^*	Pub	Keele
Aguilar and Vzquez (2015)	agv	DSGE	1965q2-2007q3	n	n	n	n	n	
Alpanda and Aysun (2014)	aya	DSGE	1996q1-2009q2	y	y			y	3
Bacchiocchi and Fanelli (2015)	bf	VAR	1956q2-2008q3					y	3
Bacchiocchi et al. (2014)	bfc	VAR	1961q1-2008q2					y	2
Barakchian and Crowe (2013)	bc	FME	1988m12-2008m6					y	4
Bernanke and Kuttner (2005)	bk	FME	1988m12-2008m6					y	4
Bernanke and Mihov (1998)	bm	VAR	1990m1-2007m11					y	4
Bernanke et al. (2005)	bbe	VAR	1960q1-2007q2					y	4
Binder et al. (2010)	bcz	VAR	1978m1-2006m12					n	
Brayton et al. (2014)	frb	DSGE	1970q1-2010q4	y	n	n	n	y	3
Breuss and Fornero (2009)	forn	DSGE	1984q1-2015q3	y	n	n	n	n	
Lorenzo Burlon (2016)	bnp	DSGE	1995q2-2014q4	y	*	n	n	n	
Caglayan et al. (2016)	ckm	NARR	1970q4-2008q4					n	3
Carabenciov et al. (2008)	gpm	DSGE	1994q1-2008q1	y	y	n	n	n	
Carlstrom et al. (2014)	cfop	DSGE	1972q2-2008q4	n	n	n	n	y	3
Ca'Zorzi et al. (2016)	jp	DSGE	1975q1-2013q3	n	n	n	n	y	3
Chin et al. (2015)	cft	DSGE	1976q1-2013q2	n	y	n	n	n	
Christiano et al. (1999)	cee	VAR	1989q4-2007q3					y	0
Christiano et al. (2014)	cmr	DSGE	1981q1-2010q2	n	n	n	n	y	4
Chung et al. (2010)	edo	DSGE	1984q4-2016q2	n	n	n	n	n	
Claus and Dungey (2012)	cld	SM	1994m1d1-2008m10d31					y	3
Claus et al. (2016)	cck	SM	1996m1d1-2015m11d30					n	
Consensus Forecast	cpf	FME	1990q1-2013q1					n	
Dungey and Osborn (2014)	duo	VAR	1983q1-2007q4					y	3
Dungey et al. (2014)	dor	VAR	1984q3-2008q1					y	2
Feldkircher and Huber (2016)	fel	VAR	1995q1-2012q4					y	4
Forni and Gambetti (2010)	fg	VAR	1990m1-2007m11					y	4
Fragetta and Melina (2013)	frm	VAR	1965q4-2007q4					y	2
Furlanetto et al. (2014)	fgs	DSGE	1964q2-2009q4	n	n	n	n	n	
Galí and Gambetti (2015)	gag	VAR	1960q1-2011q4					y	3
Gertler and Karadi (2015)	kg	FME	1991m1-2012m6d30					y	3
Gertler et al. (2008)	gst	DSGE	1960q1-2005q1	n	n	n	n	y	3
Heinlein and Krolzig (2013)	hek	VAR	1972m3-2010m8					n	
Iacoviello and Neri (2010)	in	DSGE	1965q1-2006q4	n	n	n	n	y	3
Kaihatsu and Kurozumi (2014)	kak	DSGE	1985q1-2008q4	n	n	n	n	y	3
Kamber et al. (2015)	kst	DSGE	1954q3-2011q4	n	n	n	n	y	2
Kollmann et al. (2011b)	quest	DSGE	1999q1-2015q1	y	y	n	n	y	4
Luciani (2015)	luc	VAR	1983q1-2010q4					y	3
Merola (2015)	swrm	DSGE	1965Q1-2012Q4	n	n	n	n	y	2
Merola (2015)	swrmff	DSGE	1965q1-2012q4	n	n	n	n	y	2
Miranda-Agrippino (2016)	sma	FME	1990m1-2009m12					n	
Nguyen (2015)	ngu	DSGE	1960q1-2007q1	n	n	n	n	n	
Poutineau and Vermandel (2015b)	pov1	DSGE	1993q1-2012q3	n	n	n	n	y	1
Pragidis et al. (2013)	pgt	SM	1980m1-2011m10					n	
Razafindrabe (2016)	raz	DSGE	1999q1-2011q2	y	n	n	n	y	2
Romer and Romer (2004)	rr	NARR	1988m1-2008m6					y	4
Rossi and Zubairy (2011)	roz	VAR	1955q3-2006q4					y	3
Rychalovska (2013)	ryc1	DSGE	1954q1-2008q3	n	n	n	n	y	3
Sims and Zha (2006)	sz	VAR	1989q4-2008q2					y	2
Villa (2016)	vbgg	DSGE	1983q1-2008q3	n	n	n	n	y	2
Villa (2016)	vgk	DSGE	1983q1-2008q3	n	n	n	n	y	2
Vitek (2015)	vit	DSGE	1999q3-2008q4	y	y	n	n	n	
Voss and Willard (2009)	vow	VAR	1985q2-2007q4					y	2

*Note: The table lists the studies from which we obtained monetary policy shock time series estimates for the US. Regarding model types, "FME" stands for financial market expectations, "NARR" for the narrative approach, and "SM" for statistical model. "MC" for multi-country model, "FS" for financial spillovers, "Pub" for published, and "Keele" for the journal ranking in the Keele list. For journals which are not included in the original Keele list, we allocated the International Journal of Central Banking, the American Economic Journal: Macroeconomics, the Journal of Financial Stability, and the Economic Journal to rank three, and The B.E. Journal of Macroeconomics, Manchester School, and the South African Journal of Economics to rank two. We construct monetary policy shocks for the US based on Consensus Forecast data as described in Appendix C.1. * indicates that no model documentation is currently available.*

Table 4: Overview of Euro Area Monetary Policy Shock Time Series Estimates

Reference	**Acronym**	**Type**	**Sample period**	**MC**	**FS**	**SOE**	**SOE w i^***	**Pub**	**Keele**
Albonico et al. (2014)	alb1	DSGE	1993q2-2012q4	n	n	n	n	n	
Albonico et al. (forthcoming)	alb2	DSGE	1985q1-2012q4	n	n	n	n	y	2
Alpanda and Aysun (2014)	aya	DSGE	1996q1-2009q2	y	y	n	n	y	3
Avouyi-Dovi and Sahuc (2016)	ads	DSGE	1980q2-2007q4	n	n	n	n	y	4
Kucharcukova et al. (2014)	bab	VAR	2001m4-2015m7					y	2
Barigozzi et al. (2014)	bcl	VAR	1984q1-2007q4					y	3
Benchimol and Fourcans (forthcoming)	benf	DSGE	1995q2-2013q1	n	n	n	n	y	2
Benkovskis et al. (2011)	bbfw	VAR	1999q3-2010q3					y	0
Boivin et al. (2009)	bgm	VAR	1988q1-2007q3					n	
Breuss and Fornero (2009)	forn	DSGE	1984q1-2015q3	y	n	n	n	n	
Lorenzo Burlon (2016)	bnp	DSGE	1995q2-2014q4	y	*	n	n	n	
Carabenciov et al. (2008)	gpm	DSGE	1994q1-2008q1	y	y	n	n	n	
Ca'Zorzi et al. (2016)	jp	DSGE	1975q1-2013q3	n	n	y	y	y	3
Christoffel et al. (2008)	nawm	DSGE	1985q1-2011q4	n	n	y	y	y	3
ConsensusForecast	cpf	FME	1990q1-2013q1						
Dungey and Osborn (2014)	duo	VAR	1983q1-2007q4					y	3
Dungey et al. (2014)	dor	VAR	1984q3-2008q1					y	2
Errit and Uusküla (2014)	ues	VAR	2000q3-2012q4					y	0
Fève and Sahuc (2016)	fes	DSGE	1980q2-2007q4	n	n	n	n	y	3
Gadatsch et al. (2016)	gear	DSGE	1999q2-2013q4	n	n	y	y	y	2
Gelain (2010)	gel	DSGE	1980q1-2008q3	n	n	n	n	y	1
Gerali et al. (2010)	ger	DSGE	1998q1-2009q4	n	n	n	n	y	3
Giri (2014)	gir	DSGE	1998q1-2014q2	n	n	n	n	n	
Herber and Nemec (2012)	hen2	DSGE	1999q1-2009q4	n	n	y	y	y	0
Jannsen and Klein (2011)	jk	VAR	1990q1-2008q4					n	
Kilponen et al. (2016)	ver	DSGE	1996q1-2014q3	n	n	y	y	n	
Kollmann et al. (2011b)	quest	DSGE	1999q1-2015q1	y	n	n	n	y	4
Kühl (2016)	kue	DSGE	1997q4-2013q3	n	n	n	n	n	
Neuenkirch (2013)	neu	VAR	1999m1-2012m12					y	3
Peersman and Smets (2001)	ovar	VAR	1990q2-2011q2					n	
Poutineau and Vermandel (2015a)	pov2	DSGE	1999q1-2013q3	n	n	n	n	y	3
Poutineau and Vermandel (2016)	pov3	DSGE	1999q1-2013q4	n	n	n	n	n	
Quint and Rabanal (2014)	qir	DSGE	1996q1-2011q4	n	n	n	n	y	3
Razafindrabe (2016)	raz	DSGE	1999q1-2011q2	y	n	n	n	y	2
Senaj et al. (2010)	svz	DSGE	1997q1-2016q2	y	n	n	n	n	
Slanicay (2011)	rep2	DSGE	1999q1-2010q2	n	n	y	y	y	0
Slanicay (2013)	cjef	DSGE	2000q2-2011q3	y	n	n	n	y	0
Slanicay (2016b)	sta	DSGE	2000q2-2014q1	y	n	n	n	y	0
Slanicay (2016a)	rep1	DSGE	2000q2-2014q1	y	n	n	n	y	0
Smets et al. (2013)	sww	DSGE	1970q2-2010q2	n	n	n	n	y	2
Villa (2016)	vbgg	DSGE	1983q1-2008q3	n	n	n	n	y	2
Villa (2016)	vgk	DSGE	1983q1-2008q3	n	n	n	n	y	2
Vitek (2015)	vit	DSGE	1999q3-2008q4	y	y	n	n	n	

Note: See the note to Table 3.

Table 5: Overview of UK Monetary Policy Shock Time Series Estimates

Reference	**Acronym**	**Type**	**Sample period**	**MC**	**FS**	**SOE**	**SOE w i^***	**Pub**	**Keele**
Andreasen (2012)	and	DSGE	1990q1-2008q3	n	n	n	n	y	4
Kucharcukova et al. (2014)	bab	VAR	2001m4-2015m7					y	2
Bjørnland and Jacobsen (2010)	bjo	VAR	1983q1-2006q4					y	3
Burgess et al. (2013)	boe	DSGE	1987q3-2007q4	n	n	y	n	n	
Ca'Zorzi et al. (2016)	jp	DSGE	1975q1-2013q3	n	n	y	y	y	3
Cesa-Bianchi et al. (2016)	ctv	FME	1997m7d1-2015m6d30					n	
Chen and Macdonald (2012)	cmc	DSGE	1975q2-2010q2	n	n	y	n	y	3
Chin et al. (2015)	cft	DSGE	1976q1-2013q2	n	y	y	y	n	
Cloyne and Hürtgen (forthcoming)	clh	NARR	1975m1-2007m12					y	3
Consensus forecast	cpf	FME	1990q1-2013q1						
Ellis et al. (2014)	mum	VAR	1976q1-2005q4					y	3
Faccini et al. (2013)	fmz	DSGE	1971q1-2009q4	n	n	n	n	y	2
Felcser and Vonnak (2014)	fev	VAR	1993q2-2007q4					n	
Harrison and Oomen (2010)	harr	DSGE	1958q1-2007q1	n	n	y	y	n	
Heinlein and Krolzig (2013)	hek	VAR	1972m3-2010m8					n	
Kamber and Millard (2012)	km	VAR	1979q4-2007q4					y	3
Miranda-Agrippino (2016)	sma	FME	2000m1-2012m6					n	
Mumtaz and Theophilopoulou (2016)	mut	VAR	1976q2-2009q1					n	
Razafindrabe (2016)	raz	DSGE	1999q1-2011q2	y	n	n	n	y	2
Vitek (2015)	vit	DSGE	1999q3-2008q4	y	y	n	n	n	

Note: See the note to Table 3.

Table 6: Overview of Non-US, Non-Euro Area and Non-UK Monetary Policy Shock Time Series Estimates

Reference	Acronym	Country	Type	Sample period	MC	FS	SOE	SOE w i^*	Pub	Keele
Adame et al. (2016)	acrz	MEX	DSGE	2001q1-2016q2	n	n	y	n	n	
Adolfson et al. (2011)	ado	SWE	DSGE	1980q2-2007q3	n	n	y	y	y	3
Adolfson et al. (2013)	rams	SWE	DSGE	1995q2-2015q2	n	n	y	y	n	
Alp and Elekdag (2013)	has	TUR	DSGE	2002q1-2010q4	n	n	y	y	y	0
Alp et al. (2012)	ael	KOR	DSGE	2000q1-2012q4	n	n	y	y	n	
Ambrisko et al. (2015)	abrv	CZE	DSGE	1996q1-2011q4	n	n	y	y	y	2
Argov et al. (2012)	moi	ISR	DSGE	1992q1-2011q4	n	n	y	y	n	
Assenmacher-Wesche (2008)	asw	CHE	VAR	1975q1-2006q4					y	1
Azoulay and Ribon (2010)	azr	ISR	VAR	2000m1-2008m12					n	
Kucharcukova et al. (2014)	bab	SWE, POL, CZE	VAR	2001m4-2015m7					y	2
Bank of Japan	mjem	JPN	DSGE	1978q1-2016q1	n	n	n	n	n	
Bank of Korea	bok	KOR	DSGE	2001q1-2015q2	*	*	*	*		
Bank of Thailand	bot	THA	DSGE	2002q1-2015q3	n	n	n	n	n	
Baranowski et al. (2013)	bgms	POL	DSGE	1997q1-2012q4	n	n	n	n	n	
Barnett et al. (2015)	gho	IND	VAR	1996m1-2013m12					y	1
Beltran and Draper (2008)	bel	CHE	DSGE	1970q2-2005q2	n	n	y	y	n	
Benchimol (2016)	ben	ISR	DSGE	1995q2-2013q1	n	n	n	n	y	2
Bjørnland and Jacobsen (2010)	bjo	NOR, SWE	VAR	1983q1-2006q4					y	3
Brzoza-Brzezina and Makarski (2011)	bbm	POL	DSGE	1997q1-2009q2	n	n	y	y	y	3
Melecky and Buncic (2008)	bud	AUS	DSGE	1984q1-2005q4	n	n	y	y	y	2
Melecky and Buncic (2008)	buv	AUS	VAR	1984q1-2005q4					y	2
Caputo et al. (2008)	mas	CHL	DSGE	2001q2-2016q1	n	n	y	y	n	
Carabenciov et al. (2008)	gpm	JPN	DSGE	1994q1-2008q1	y	y	n	n	n	
Ca'Zorzi et al. (2016)	jp	AUS, CAN	DSGE	1975q1-2013q3	n	n	y	y	y	3
Chen and Columba (2016)	cco	SWE	DSGE	1996q1-2014q4	n	n	y	n	n	
Claus and Dungey (2016)	cd	AUS, CAN, JP	SM	1993m1d1-2014m11d30					y	2
Claus et al. (2016)	cck	JPN	SM	1998m1d1-2015m6d30					y	0
Copaciu et al. (2016)	cnb	ROM	DSGE	2005q1-2014q1	y	y	n	n	n	
Cuche-Curti et al. (2009)	cdn	CHE	DSGE	1995q2-2015q4	n	n	y	n	n	
Dai et al. (2015)	dmz	CHN	DSGE	1978q2-2007q4	n	n	n	n	y	2
de Carvalho and Castro (2015)	dc	BRA	DSGE	1999q3-2013q4	n	n	y	y	n	
de Carvalho and Valli (2011)	dv	BRA	DSGE	1999q1-2010q2	n	n	y	n	n	
de Carvalho et al. (2014)	dcc	BRA	DSGE	1999q3-2012q4	n	n	n	n	n	
Bong et al. (2016)	dpb	AUS, NZL, CAN	DSGE	1989q2-2006q4	n	n	y	y	n	
Dorich et al. (2013)	tot	CAN	DSGE	1990q1-2014q4	n	n	y	y	n	
Drygalla (2015)	dry	POL	VAR	1994q1-2013q4					n	
Felcser and Vonnak (2014)	fev	AUS, CAN	VAR	1993q2-2007q4					n	
Fueki et al. (2016)	fue	JPN	DSGE	1990q1-2008q4	n	n	n	n	y	3
Gabriel et al. (2012)	glpy	IND	DSGE	1996q1-2008q4	n	n	n	n	y	0
Gabriel et al. (2016)	gly	IND	DSGE	1996q1-2008q4	n	n	y	*	y	0
Gallic and Vermandel (2016)	gav	NZL	DSGE	1989q1-2014q2	n	n	y	n	n	
Garcia and Gonzalez (2014)	gga	AUS, CHL, COL, NZL, PER	VAR	1995q1-2015q4					y	2
Gervais and Gosselin (2014)	lens	CAN	DSGE	1993q1-2014q4	n	n	*	*	n	
Gonzalez et al. (2015)	ghr	COL	DSGE	1999q1-2013q3	n	n	y	n	n	
Grabek and Klos (2013)	grk	POL	DSGE	1999q1-2011q3	n	n	y	y	n	
Gupta and Steinbach (2013)	gs	ZAF	VAR	1981q2-2010q4					y	2
Herber and Nemec (2009)	hen1	CZE	DSGE	1996q2-2008q4	n	n	n	n	n	
Herber and Nemec (2012)	hen2	CZE	DSGE	1999q1-2009q4	y	n	n	n	y	0
Hernan Hernandez and Ortiz Bolanos (2016)	hhob	BRA, CHL, COL, MEX, PER	DSGE	1999q1-2015q3	n	n	y	n	n	
Hirose (2014)	hir	JPN	DSGE	1983q2-2013q1	n	n	n	n	n	
Jacob and Munro (2016)	jam	NZL	DSGE	1998q4-2014q3	n	n	y	n	n	
Jiang and Kim (2013)	jkc	CHN	VAR	1993q1-2009q3					y	0
Junicke (2015)	mju	POL	DSGE	1996q4-2012q4	y	n	n	n	n	
Kamber et al. (2016)	nzsim	NZL	DSGE	1993q2-2013q1	n	n	y	n	y	2
Kapur and Behera (2012)	kbe	IND	SM	1999q3-2010q3					n	
Kim (2014)	tbk	KOR	DSGE	2000q2-2012q4	n	n	y	y	y	0
Kimura and Nakajima (2016)	nik	JPN	VAR	1990q1-2015q3					y	2
Körner (2015)	koe	CZE	VAR	1999m1-2011m9					y	0
Kreptsev and Seleznev (2016)	krs	RUS	DSGE	2003q1-2013q1	n	n	y	n		
Leist (2013)	lei	CHE	DSGE	1989q1-2010q2	n	n	y	y	y	0
Li and Spencer (2015)	lsp	AUS	DSGE	1993q1-2013q4	n	n	y	n	y	2
de Menezes Linardi (2016)	lin	BRA	DSGE	2000q1-2014q1	n	n	y	y	n	
Lopez and Rodriguez (2008)	lro	COL	DSGE	1980q1-2005q4	n	n	n	n	n	
Lopez et al. (2008)	lpr	COL	DSGE	1980q1-2005q4	n	n	y	n	n	
Malakhovskaya and Minabutdinov (2014)	mmi	RUS	DSGE	1999q3-2011q3	y	n	n	n	y	0
Milani (2011)	mil2	AUS, CAN, NZL	DSGE	1982q3-2007q2	y	n	n	n	y	3
Milani and Park (2015)	mil	KOR	DSGE	1991q2-2012q4	n	n	y	y	y	2
Minetti and Peng (2016)	tpe	CHN	DSGE	1999q1-2011q3	n	n	n	n	n	
Naraidoo and Paya (2012)	run	ZAF	SM	1986m1-2008m11					y	2
Ncube and Ndou (2011)	nd1	ZAF	VAR	1976q1-2009q4					y	0
Ncube and Ndou (2013)	nd2	ZAF	VAR	1983q3-2010q1					n	
Paetz and Gupta (2016)	pag	ZAF	DSGE	1971q1-2013q1	n	n	y	n	y	2
Patra and Kapur (2012)	pka	IND	SM	1998q1-2009q1					y	0
Pop (2016)	pre	ROM	DSGE	2001q1-2008q4					y	2
Pragidis et al. (2013)	pgt	BRA	SM	1980m1-2011m10					n	
Raghavan et al. (2016)	ras1	CAN	VAR	1974m3-2007m12					y	3
Raghavan et al. (2016)	ras2	CAN	VAR	1975m1-2007m12					y	3
Razafindrabe (2016)	raz	JPN, CHE, CHN	DSGE	1999q1-2011q2	y	n	n	n	y	2
Rees et al. (2016)	rsh	AUS	DSGE	1992q1-2013q4	n	n	y	y	y	2
Robstad (2014)	rob	NOR	VAR	1994q3-2013q4					n	
Rudolf and Zurlinden (2014)	ruz	CHE	DSGE	1983q2-2015q4	n	n	y	y	n	
Rysanek et al. (2012)	tov	CZE	DSGE	1998q3-2010q4	n	n	y	y	y	0
Roman (2013)	sem	RUS	DSGE	2003q1-2012q1	n	n	y	n	y	0
Seneca (2010)	ice	ISL	DSGE	1992q1-2016q1	n	n	y	y	n	
Sheena and Wang (2016)	shw	AUS	DSGE	1993q2-2013q1	n	n	y	y	y	2
Shulgin (2014)	shu	RUS	DSGE	2001q1-2014q2	*	*	*	*	y	0
Slanicay (2011)	rep2	CZE	DSGE	1999q1-2010q2	n	n	y	y	y	0
Slanicay (2013)	cjef	CZE	DSGE	2000q2-2011q3	y	n	n	n	y	0
Slanicay (2016b)	sta	CZE	DSGE	2000q2-2014q1	y	n	n	n	y	0
Slanicay (2016a)	rep1	CZE	DSGE	2000q2-2014q1	y	n	n	n	y	0
Steinbach et al. (2009)	sms	ZAF	DSGE	1990q1-2007q4	n	n	y	y	y	2
Sveriges Riksbank	bvar	SWE	VAR	1995q4-2014q4						
Tonner et al. (2011)	tpv	CZE	DSGE	1999q3-2010q2	n	n	y	y	y	0
Tonner et al. (2015)	tvt	CZE	DSGE	1998q1-2014q4	n	n	y	y	n	
Toroj and Konopczak (2012)	tor	POL	DSGE	1995q2-2011q2	y	n	n	n	y	0
Tvrz and Vasicek (2016)	tvv	CZE, HUN, POL	DSGE	1999q2-2014q4	n	n	y	y	y	0
Vitek (2015)	vit	NZL, AUS, SWE, CAN, ZAF, KOR, CHN, JPN, CHE, ISR, CHL, IND, TUR, COL, CZE	DSGE	1999q3-2008q4	y	y	n	n	n	
Voss and Willard (2009)	vow	AUS	VAR	1985q2-2007q4					y	2

Note: See the note to Table 3

Table 7: Relationship between the Monetary Policy Shock Time Series Estimates' Cross-country Correlations and Economies' International Financial Integration

	(1) DSGE	(2) DSGE	(3) DSGE	(4) Non-DSGE
Overall financial integration	0.08***		0.07***	-0.00
	(0.00)		(0.00)	(0.84)
Share of US in overall financial integration		0.07***	0.06***	0.02
		(0.00)	(0.00)	(0.45)
Country 1 dummies	Yes	Yes	Yes	Yes
Country 2 dummies	Yes	Yes	Yes	Yes
Adj. R-squared	0.13	0.13	0.14	0.03
Observations	8494	7962	7962	1237
Country pairs	190	171	171	120

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Testing Additional Predictions—Role of Banking Integration

	(1)	(2)	(3)
Overall financial integration	0.07***	0.07***	0.02
	(0.00)	(0.01)	(0.53)
Share of US in overall financial integration	0.06***	0.05***	0.06***
	(0.00)	(0.00)	(0.00)
Share of portfolio assets in GFAL		-0.09	
		(0.33)	
Share of FDI in GFAL		0.04	
		(0.19)	
Share of other investment in GFAL		0.04	
		(0.11)	
Non-resident bank loans/GDP			0.03***
			(0.00)
Country 1 dummies	Yes	Yes	Yes
Country 2 dummies	Yes	Yes	Yes
Adj. R-squared	0.14	0.14	0.14
Observations	7962	7962	7962
Country pairs	171	171	171

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Testing Additional Predictions—Structural Multi-country Models, Models with International Financial Frictions, and Small-open Economy Models

	(1)	(2)	(3)	(4)	(5)
Overall financial integration	0.08***	0.08***	0.08***	0.09***	0.10***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Share of US in overall financial integration	0.08***	0.08***	0.08***	0.07***	0.08***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
At least one multi-country model		-0.01			-0.02
		(0.54)			(0.19)
Over. fin. integr. x at least one multi-country model		-0.01*			-0.02**
		(0.07)			(0.04)
Share of US in over. fin. integr. x at least one multi-country model		-0.01			-0.00
		(0.65)			(0.92)
At least one model with intern. fin. frictions			0.02		0.02
			(0.30)		(0.21)
Over. fin. integr. x at least one model with intern. fin. frictions			-0.03**		-0.03***
			(0.01)		(0.00)
Share of US in over. fin. integr. x at least one model with intern. fin. frictio			-0.04*		-0.04*
			(0.10)		(0.07)
At least one SOE model with i^*				-0.02**	-0.03***
				(0.02)	(0.00)
Over. fin. integr. x at least one SOE model with i^*				-0.02***	-0.03***
				(0.00)	(0.00)
Share of US in over. fin. integr. x at least one SOE model with i^*				0.01	0.01
				(0.30)	(0.24)
Country 1 dummies	Yes	Yes	Yes	Yes	Yes
Country 2 dummies	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.14	0.14	0.14	0.14	0.15
Observations	5739	5739	5739	5739	5739
Country pairs	171	171	171	171	171

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Testing Additional Predictions—Capital Controls and Exchange Rate Flexibility

	(1)	(2)	(3)
Overall financial integration	0.07***	0.06**	0.06**
	(0.00)	(0.02)	(0.04)
Share of US in overall financial integration	0.06***	0.06***	0.06***
	(0.00)	(0.00)	(0.00)
Capital controls (PC)		0.01	0.04
		(0.29)	(0.20)
FX flexibility		0.00	0.00
		(0.64)	(0.36)
Capital controls x At least one economy is EME			-0.03
			(0.35)
FX flexibility x At least one economy is EME			-0.00
			(0.24)
At least one economy is EME			0.18
			(0.19)
Country 1 dummies	Yes	Yes	Yes
Country 2 dummies	Yes	Yes	Yes
Adj. R-squared	0.14	0.14	0.14
Observations	7962	7962	7962
Country pairs	171	171	171

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Robustness Checks—Alternative Explanations I

	(1)	(2)	(3)	(4)	(5)	(6)
Overall financial integration	0.07***	0.07***	0.05**	0.05**	0.08***	0.05
	(0.00)	(0.00)	(0.04)	(0.02)	(0.01)	(0.24)
Share of US in overall financial integration	0.06***	0.09***	0.06***	0.06***	0.06***	0.09***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Trade integration		0.01				0.01
		(0.68)				(0.66)
Share of US in trade integration		-0.02***				-0.02***
		(0.01)				(0.01)
Bilateral financial integration			0.01*			0.01
			(0.05)			(0.55)
Bilateral trade integration				0.01		0.00
				(0.23)		(0.83)
Net short in foreign currency					-0.02	-0.00
					(0.48)	(0.92)
Country 1 dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country 2 dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.14	0.14	0.14	0.14	0.14	0.14
Observations	7962	7962	7962	7962	7962	7962
Country pairs	171	171	171	171	171	171

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 12: Robustness Checks—Alternative Explanations II

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Overall financial integration	0.07***	0.06***	0.07***	0.07***	0.05**	0.07***	0.07***	0.07***	0.05*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)	(0.00)	(0.00)	(0.00)	(0.05)
Share of US in overall financial integration	0.06***	0.06***	0.06***	0.07***	0.07***	0.07***	0.07***	0.07***	0.08***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Difference in trade integration		-0.01							-0.01
		(0.15)							(0.26)
Difference in centrality			-0.00						-0.00
			(0.79)						(0.58)
Difference in GVC position				0.00					0.01
				(0.57)					(0.42)
Difference in GVC participation					-0.01**				-0.01*
					(0.04)				(0.07)
Heterogeneity in output structure						0.01			0.00
						(0.54)			(0.91)
Heterogeneity in export structure							0.01		0.01
							(0.34)		(0.17)
Heterogeneity in import structure								0.01	0.00
								(0.71)	(0.93)
Country 1 dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country 2 dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Observations	7962	7962	7962	7572	7572	7572	7572	7572	7572
Country pairs	171	171	171	153	153	153	153	153	153

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 13: Robustness Checks—Alternative Samples

	(1) Baseline	(2) CBs/IOs	(3) w/o Vitek	(4) Max. sample
Overall financial integration	0.07***	0.17*	0.08***	0.06***
	(0.00)	(0.05)	(0.00)	(0.00)
Share of US in overall financial integration	0.06***	0.15***	0.08***	0.07***
	(0.00)	(0.00)	(0.00)	(0.00)
Country 1 dummies	Yes	Yes	Yes	Yes
Country 2 dummies	Yes	Yes	Yes	Yes
Adj. R-squared	0.14	0.25	0.14	0.14
Observations	7962	214	5739	9063
Country pairs	171	105	171	300

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 14: Robustness Checks—Published Papers

	(1) Baseline	(2) Published	(3) Keele> 1	(4) Keele> 2
Overall financial integration	0.07***	0.04*	0.06**	0.10
	(0.00)	(0.07)	(0.04)	(0.27)
Share of US in overall financial integration	0.06***	0.11***	0.13**	0.17*
	(0.00)	(0.00)	(0.02)	(0.08)
Country 1 dummies	Yes	Yes	Yes	Yes
Country 2 dummies	Yes	Yes	Yes	Yes
Adj. R-squared	0.14	0.15	0.18	0.24
Observations	7962	1752	671	149
Country pairs	171	105	78	28

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 15: Robustness Checks—Alternative Model Specifications

	(1) Baseline	(2) Insign.=0	(3) Logit	(4) FE	(5) rreg	(6) Min.	(7) Collapsed
Overall financial integration	0.07***	0.05***	0.14***	0.07***	0.07***	0.07***	0.03***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Share of US in overall financial integration	0.06***	0.05***	0.13***	0.06***	0.06***	0.06***	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.51)
Country 1 dummies	Yes	Yes	Yes	No	Yes	Yes	No
Country 2 dummies	Yes	Yes	Yes	No	Yes	Yes	No
Country-shock 1 dummies	No	No	No	Yes	No	No	No
Country-shock 2 dummies	No	No	No	Yes	No	No	No
Adj. R-squared	0.14	0.10	0.14	0.25	0.14	0.14	0.06
Observations	7962	7962	7962	7962	7962	7962	171
Country pairs	171	171	171	171		171	

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

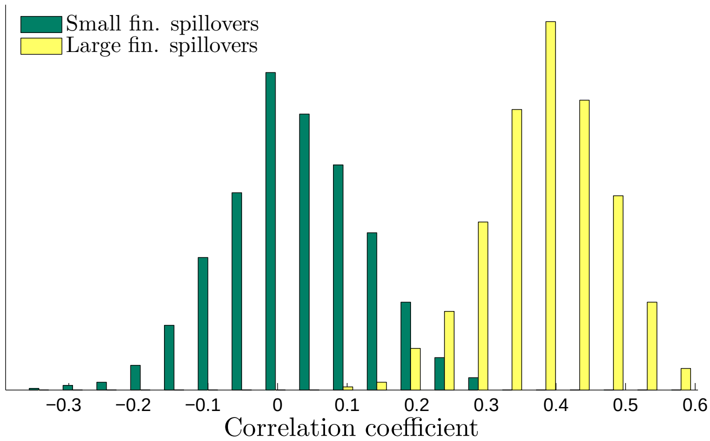
Table 16: Robustness Checks—US vs. Euro Area as Core Economy

	(1) Baseline	(2) No EA/US
Overall financial integration	0.07***	0.05**
	(0.00)	(0.02)
Share of US in overall financial integration	0.06***	0.01
	(0.00)	(0.73)
Share of EA in overall financial integration		0.06**
		(0.04)
Country 1 dummies	Yes	Yes
Country 2 dummies	Yes	Yes
Adj. R-squared	0.14	0.10
Observations	7962	4662
Country pairs	171	153

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

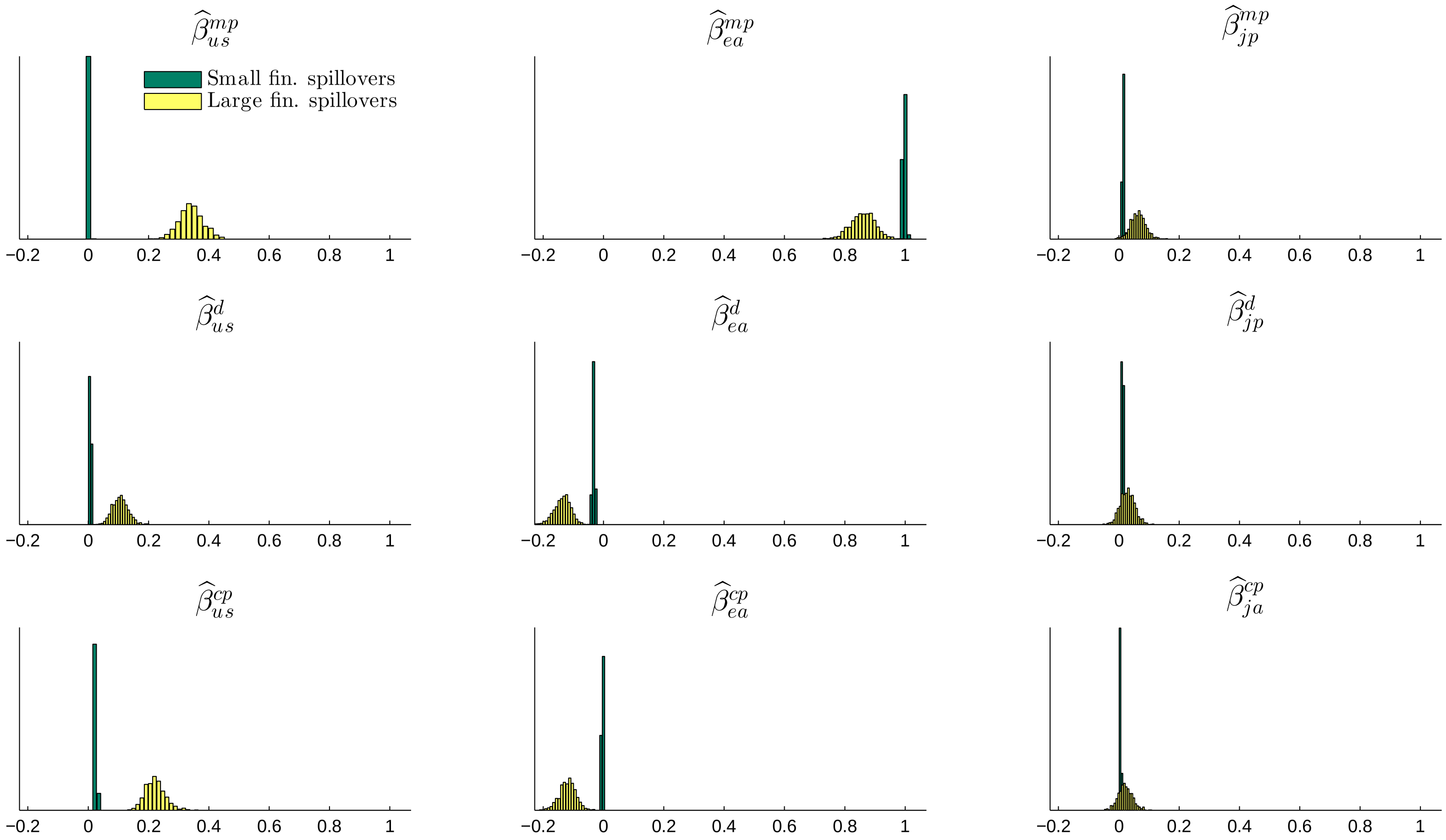
B Figures

Figure 1: Distribution of Correlation between Smoothed Monetary Policy Shocks for the Euro Area and Japan across Replications in the Monte Carlo Experiment



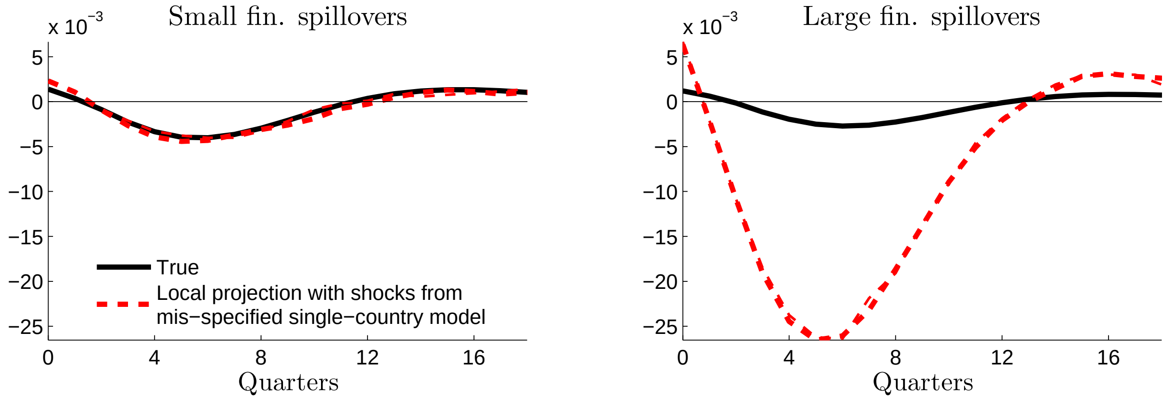
Note: The figure shows the distribution of the correlations between the smoothed monetary policy shocks for the non-core economies of the euro area and Japan across the 1,000 replications of the Monte Carlo experiment. The smoothed monetary policy shocks are obtained from applying the Kalman-filter with the corresponding single-country models on the data simulated based on the multi-country data-generating process. The dark green bars refer to the distribution of the cross-country correlations under the "small financial spillover" parametrisation of the data-generating process, and the light yellow bars to the distribution of the cross-country correlations under the "large financial spillover" parametrisation.

Figure 2: Distribution of Coefficient Estimates in the Regression of Estimated Euro Area Monetary Policy Shocks on the True Shocks Across Replications of the Monte Carlo Experiment



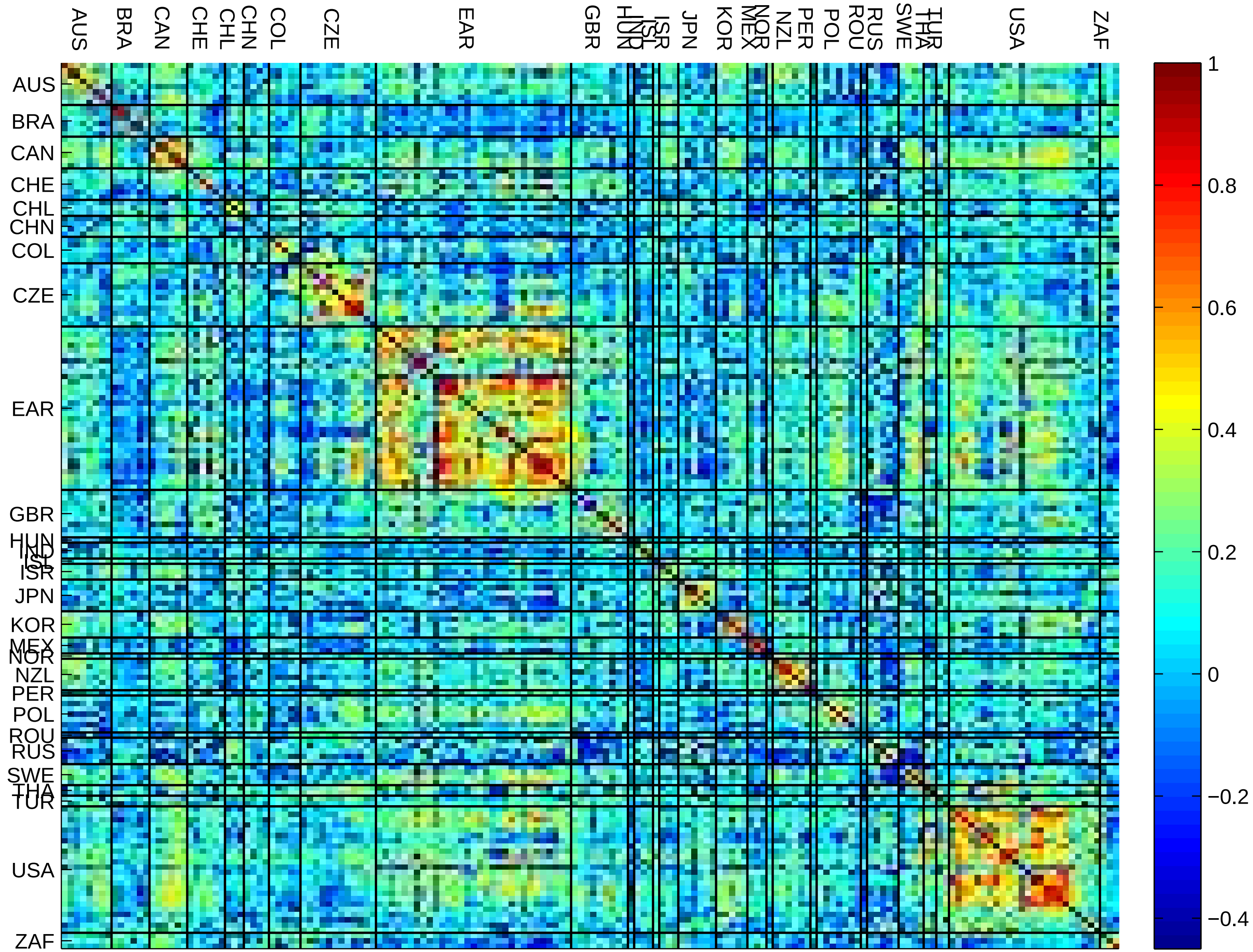
Note: The figure displays the distribution of the coefficient estimates in the regression of Equation (2).

Figure 3: True and Local Projection Spillover Estimates for Euro Area Monetary Policy Shocks to the US in the Monte Carlo Experiment



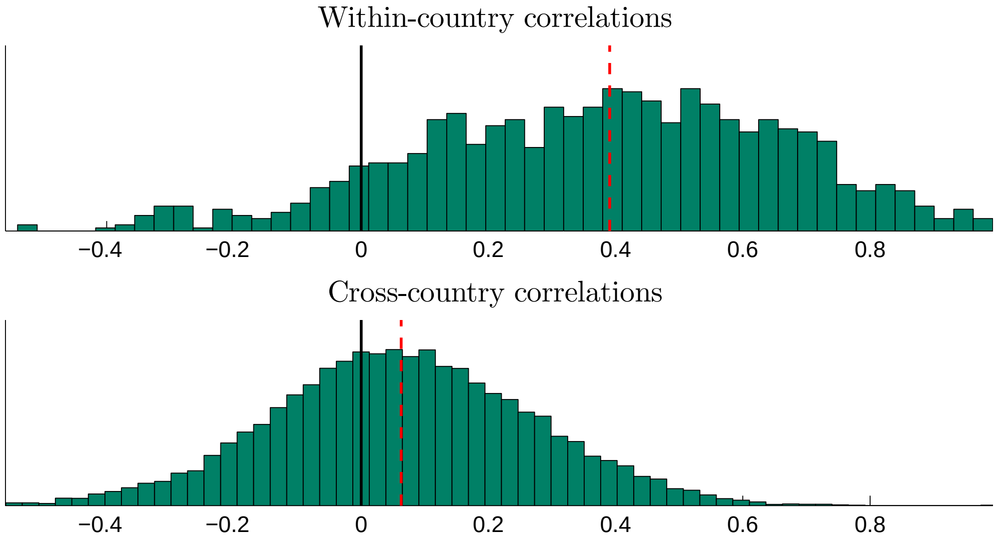
Note: The figure shows the spillovers from a euro area monetary policy shock to the US output gap. The black solid line represents the true value of the spillover implied by the multi-country model of Coenen and Wieland (2002), and the thick (thin) red dashed line the average (median) spillover estimate across all replications of the Monte Carlo experiment. The left-hand side panel displays the spillovers for the "small financial spillover" parametrisation, and the right-hand side panel under the "large financial spillover" parametrisation. The spillover estimates are obtained using the smoothed monetary policy shocks and data on the US output gap in local projections. In each replication of the Monte Carlo experiment, the smoothed monetary policy shocks are obtained applying the Kalman-filter with the corresponding single-country models on the data simulated based on the multi-country data-generating process. The US output gap data stem from the corresponding simulations of the multi-country data-generating process.

Figure 4: Correlation of NK DSGE Monetary Policy Shock Time Series Estimates



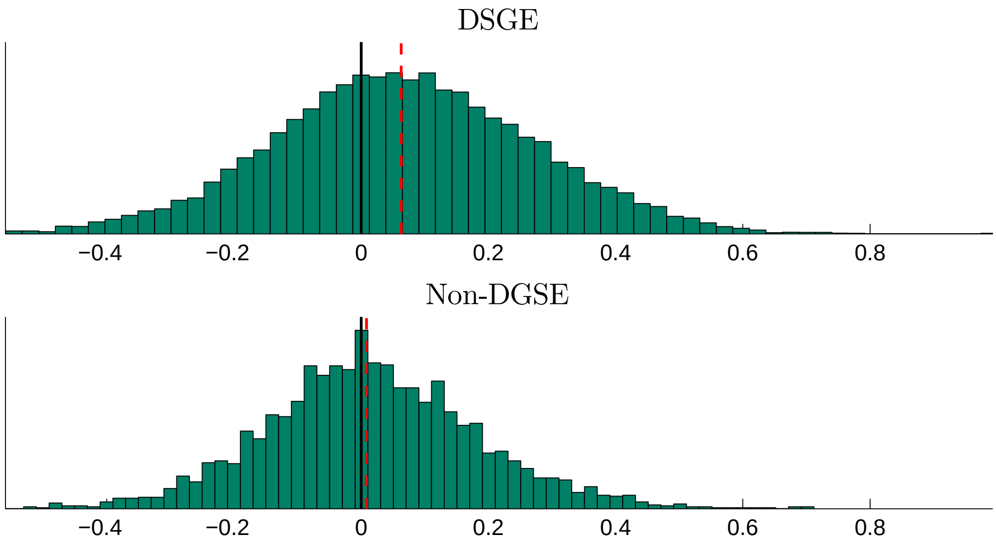
Note: The figure displays the heat map of the correlations between the monetary policy shock time series estimates obtained from NK DSGE models in the database.

Figure 5: Distribution of Within and Cross-country Correlations Between NK DSGE Model Monetary Policy Shock Time Series Estimates



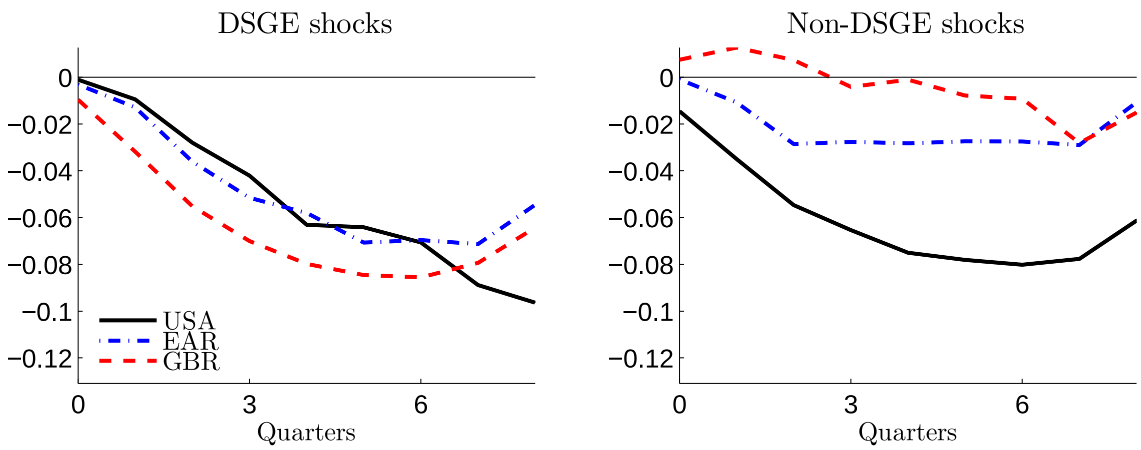
Note: The figure displays the distributions of the within-country (top panel) and cross-country (bottom panel) correlations between the monetary policy shock time series estimates obtained from NK DSGE models in our database. The red dashed lines indicates the mean of the distributions.

Figure 6: Distribution of Cross-country Correlations Between Monetary Policy Shock Time Series Estimates obtained from NK DSGE and non-NK DSGE Models



Note: The figure displays the distributions of the cross-country correlations between monetary policy shock time series estimates obtained from NK DSGE models (top panel) and non-NK DSGE models (VAR models, statistical models, the narrative approach and financial market expectations; bottom panel).

Figure 7: Estimates of Global Output Spillovers from Monetary Policy based on Local Projections and Monetary Policy Shock Estimates from DSGE Models and Non-DSGE Approaches



Note: The figure shows the estimates of the spillovers from US (black solid line), euro area (blue dash-dotted line) and UK (red dashed line) monetary policy to global output. The global spillover estimates are obtained as GDP-weighted averages of the spillovers to individual economies. The spillovers are estimated using local projections with the first principal component of all monetary policy shock estimates available over the time period 1993 to 2007 for the US, the euro area and the UK, respectively. The left-hand side panel displays the spillover estimates for the case when only DSGE model monetary policy shocks are used to determine the principal component, and the right-hand side panel for the case when only non-DSGE model shocks are used.

C Online Appendix

C.1 Construction of monetary policy shocks based on Consensus Forecast data

We use monthly data on three-month ahead financial market expectations about of short-term interest rates from Consensus Economics in order to form monetary policy shock time series. To identify the benchmark interest rate to use for the construction of monetary policy surprise series we follow closely the target interest rate for the surveyed financial institutions as reported by Consensus Economics and change the benchmark according to changes reported. For the US we first subtract from the actual realised short-term interest rate one-quarter lagged, three-month ahead Consensus Forecast short-term interest rate expectation. We then regress the resulting difference on four lags of the log-difference of US industrial production and the consumer price index. The residual from this regression in our time series of US monetary policy shocks constructed based on Consensus Forecast data. For the time period from 2003 onwards, we additionally regress this time series of residuals on Citi-Group macroeconomic surprises, and use the residuals from this regression as US monetary policy shocks. For the euro area and the UK, in the first regression in addition to domestic variables we also include US industrial production and inflation. For the euro area, prior to January 2005, when a euro area survey was established, the financial-market expectations are a weighted average of the euro area countries' data. From January 1990 through December 1998, the euro area average was weighted by GDP at purchasing power parities. From January 1999 onwards the euro area average was weighted by the nominal stock of government bonds.

C.2 The Model of Coenen and Wieland (2002)

C.2.1 Model description

For $i \in \{us, ea, ja\}$, the IS-curve for the domestic output gap q_{it} is given by

$$q_{it} = \sum_{j=1}^{3} \delta_{ij}^{q} q_{i,t-j} + \delta_i^z z_{it} + \delta_i^{rl}(rl_{i,t-1} - \overline{rl}_i) + \sigma^{e^d} e_{it}^d, \tag{C.1}$$

where $z_{it} = \sum_{j=1,j\neq i}^{N} w_{ij} \cdot \omega_{ij,t}$ is an economy's real effective exchange rate with w_{ij} representing bilateral trade shares and $\omega_{ij,t}$ bilateral exchange rates; $r_{it}^{(l)}$ is the real long-term interest rate; and e_{it}^d is a demand shock. Quarter-on-quarter inflation is determined in a backward-looking Phillips-curve

$$\pi_{it} = \left(\sum_{j=1}^{3} \phi_{ji}\right)^{-1} \left(\sum_{j=0}^{3} \phi_{ji} cwp_{i,t-j} - (\phi_{2i} + \phi_{3i})\, \pi_{i,t-1} - \phi_{3i}\pi_{i,t-2}\right), \tag{C.2}$$

where cwp_{it} is the contract wage. Based on specification tests Coenen and Wieland (2002) consider fixed-duration Taylor-style wage contracts for the euro area and Japan

$$\begin{aligned} cwp_{it} = &(\phi_{1i} + \phi_{2i} + \phi_{3i})\, E_t\pi_{i,t+1} + (\phi_{2i} + \phi_{3i})\, E_t\pi_{i,t+2} + \phi_{3i}E_t\pi_{i,t+3} \\ &+ \gamma_i \sum_{j=0}^{3} \phi_{ji} E_t q_{i,t+j} + \sigma_i^{cw} e_{it}^{cw}, \qquad i \in \{ea, ja\}, \end{aligned} \tag{C.3}$$

and relative real wage contracts for the US

$$\begin{aligned} cwp_{us,t} &= \sum_{j=0}^{3} \phi_{j,us} E_t \varpi_{us,t+j} + \gamma_{us} \sum_{j=0}^{3} \phi_{j,us} E_t q_{us,t+j} + \sigma_{us}^{cw} e_{us,t}^{cw}, \\ \varpi_{us,t} &= \sum_{j=0}^{3} \phi_{j,us} cwp_{us,t-j}. \end{aligned} \tag{C.4}$$

The model is closed by monetary policy rules which determine the nominal short-term interest rate $i_{it}^{(s)}$ according to

$$i_{it}^{(s)} = \rho_{i^s} i_{i,t-1}^{(s)} + \alpha_i \left(\pi_{it}^{(4)} - \pi_i^T\right) + \beta_i q_{it} + (1-\rho_i)\left(\overline{r}_i^{(l)} + \pi_{it}^{(4)}\right) + \sigma_i^{i^s} e_{it}^{mp}, \tag{C.5}$$

where π_i^T represents the inflation target, and e_{it}^{mp} is a monetary policy shock. Year-on-year inflation $\pi_{it}^{(4)}$ is given by

$$\pi_{it}^{(4)} = \sum_{j=0}^{3} \pi_{i,t-j}. \tag{C.6}$$

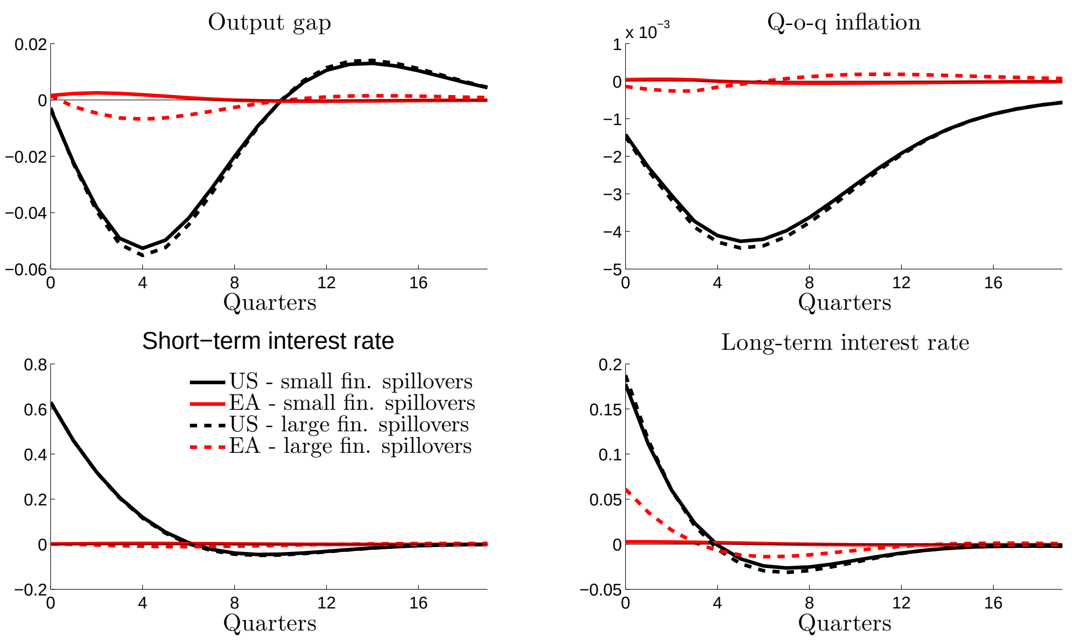
The real long-term interest rate is defined as

$$r_{it}^{(l)} = i_{it}^{(l)} - 0.5 \sum_{j=1}^{8} E_t \pi_{i,t+j}. \tag{C.7}$$

C.2.2 Responses of domestic and foreign variables to monetary policy shocks

Figure 8 displays the responses of the US and the euro area to a contractionary monetary policy shock in the US. The impulse responses under the "small financial spillovers" scenario are depicted by the solid lines, and those under the "large financial spillovers" scenario by the dashed lines. While the domestic responses in the US economy are rather similar under the two scenarios, the spillovers to output and inflation in the euro area from a monetary policy shock abroad are substantially larger in the “large financial spillovers” scenario. In particular, under the “small financial spillovers” scenario the spillovers are small and expansionary as those arising through trade dominate: The euro depreciates in response to a monetary policy tightening in the US, stimulating the euro area’s net exports through expenditure switching. In contrast, under the “large financial spillovers” scenario the expansionary effects from a US monetary policy tightening in the euro area are dominated by the contractionary spillovers through financial markets: Euro area long-term interest rates rise in tandem with those in the US, dampening domestic demand in the euro area. Quantitatively, under the “large financial spillovers” scenario the magnitude of spillovers is at the lower end of the estimates in the empirical literature (see Georgiadis, forthcoming; Dedola et al., 2015; Banerjee et al., 2015; Feldkircher and Huber, 2015).

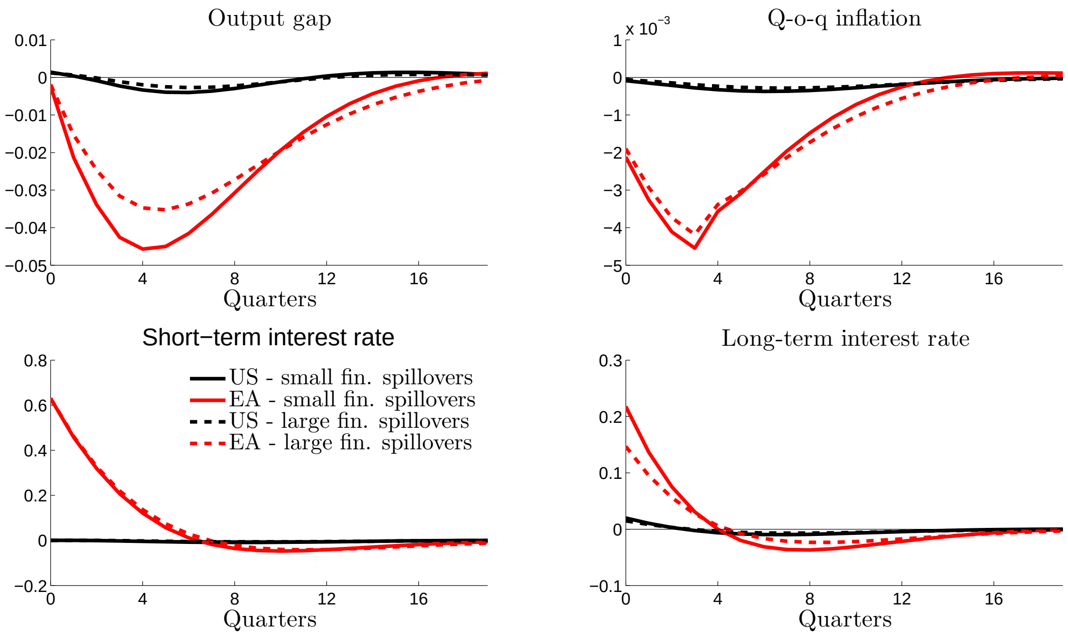
Figure 8: True Model Impulse Responses to a US Monetary Policy Shock for Small and Large Financial Spillovers



Note: The figure shows the impulse responses of several macroeconomic variables to a US monetary policy shock in the model of Coenen and Wieland (2002) and described in Appendix C.2. The dark black lines represent the responses of the euro area variables, and the light red lines those of the US variables. The solid lines represent the responses under the “small financial spillovers” parametrisation, and the dashed lines those under the “large financial spillovers” parametrisation.

Figure 9 displays the responses of the US and the euro area to a contractionary monetary policy shock in the euro area. In contrast to the spillovers from US monetary policy, those emitted from the euro area are contractionary both under the “small financial spillovers” and the “large financial spillovers” scenarios. This is due to the relatively large susceptibility of US long-term interest rates to foreign shocks in our calibration compared to the polar case of the "small financial spillovers" scenario calibration for the euro area. However, the spillovers from euro area monetary policy shocks to the US are smaller for both scenarios compared to the spillovers to the euro area from US monetary policy shocks. For the euro area, the domestic impact of a euro area monetary policy shock is smaller under the "large financial spillovers" scenario as the transmission from short to long-term interest rates is weaker. This is consistent with the recent "dilemma hypothesis" according to which financial globalisation reduces monetary policy autonomy and effectiveness, partly due to a dampened transmission of short term to long-term interest rates (Ito, 2014; Miyajima et al., 2014; Obstfeld, 2015; Rey, 2015).

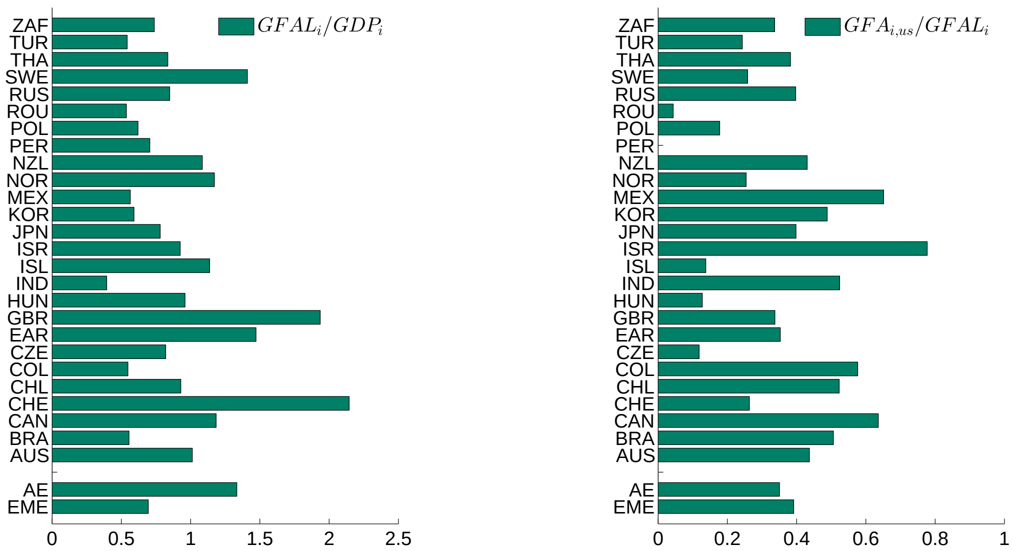
Figure 9: True Model Impulse Responses to a Euro Area Monetary Policy Shock for Small and Large Financial Spillovers



Note: The figure shows the impulse responses of several macroeconomic variables to a euro area monetary policy shock in the model of Coenen and Wieland (2002) and described in Appendix C.2. The dark black lines represent the responses of the euro area variables, and the light red lines those of the US variables. The solid lines represent the responses under the "small financial spillovers" parametrisation, and the dashed lines those under the "large financial spillovers" parametrisation.

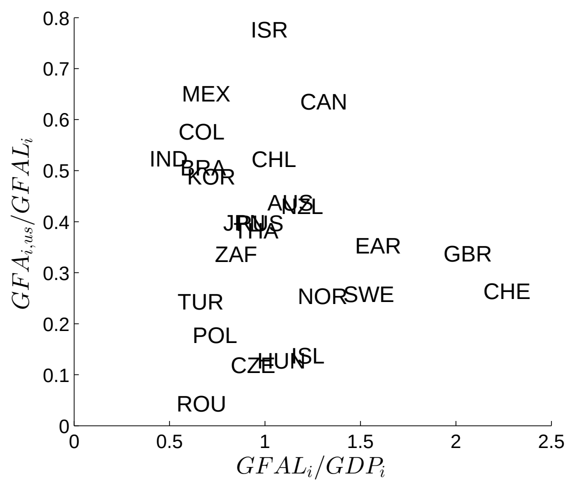
C.3 Additional figures

Figure 10: Economies' International Financial Integration Patterns



Note: The figure displays economies' gross foreign asset and liability positions relative to GDP (left-hand side panel) as well as the share of economies' gross foreign asset and liability position accounted for by the US (right-hand side panel). The overall gross foreign asset and liability positions are taken from Lane and Milesi-Ferretti (2007), and the bilateral gross foreign asset and liability positions with the US from the IMF CPIS. The latter refer only to portfolio investment assets and liabilities. The depicted values are averages over the time period from 1993 to 2007 for the left-hand side panel and 2001 to 2007 for the right-hand side panel. The depicted values are one plus the logarithm of the original values.

Figure 11: Scatter Plot of Economies' Overall and Bilateral Financial Integration with the US



Note: The figure presents a scatterplot of economies' gross foreign asset and liability position relative to GDP (horizontal axis) against the share of economies' gross foreign asset and liability position accounted for by the bilateral position with the US (vertical axis).