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Balance sheet effects on monetary and financial spillovers: The East Asian crisis plus 20

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A R T I C L E I N F O

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A B S T R A C T

We study how the financial conditions in the Center Economies [the U.S., Japan, and the Euro area] impact other countries over the period 1986 through 2015. Our methodology relies upon a two-step approach. We focus on five possible linkages between the center economies (CEs) and the non-Center economics, or peripheral economies (PHs), and investigate the strength of these linkages. For each of the five linkages, we first regress a financial variable of the PHs on financial variables of the CEs while controlling for global factors. Next, we examine the determinants of sensitivity to the CEs as a function of country-specific macroeconomic conditions and policies, including the exchange rate regime, currency weights, monetary, trade and financial linkages with the CEs, the levels of institutional development, and international reserves. Extending our previous work (Aizenman et al., 2016), we devote special attention to the impact of currency weights in the implicit currency basket, balance sheet exposure, and currency composition of external debt. We find that for both policy interest rates and the real exchange rate (REER), the link with the CEs has been pervasive for developing and emerging market economies in the last two decades, although the movements of policy interest rates are found to be more sensitive to global financial shocks around the time of the emerging markets' crises in the late 1990s and early 2000s, and since 2008. When we estimate the determinants of the extent of connectivity, we find evidence that the weights of major currencies, external debt, and currency compositions of debt are significant factors. More specifically, having a higher weight on the dollar (or the euro) makes the response of a financial variable such as the REER and exchange market pressure in the PHs more sensitive to a change in key variables in the U.S. (or the euro area) such as policy interest rates and the REER. While having more exposure to external debt would have similar impacts on the financial linkages between the CEs and the PHs, the currency composition of international debt securities does matter. Economies more reliant on dollar-denominated debt issuance tend to be more vulnerable to shocks emanating from the U.S.

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1. Introduction

On the eve of the 20th year anniversary of the East Asian crisis, we investigate the impact of balance sheet exposures, economic structure and trilemma choices on the exposure of countries to shocks emanating from the center. Events over recent decades have vividly illustrated that balance sheet exposure impact monetary and fiscal spaces, capital mobility, and exchange market pressure. The evolution of global dynamics during the post-Global Financial Crisis period led Rey (2013) to propound the hypothesis that exchange rate regimes no longer insulate countries from global financial cycles – in other words, the demise of the Mundellian Trilemma. In this paper, however, we investigate whether Rey's view means the end of the trilemma hypothesis or a prematurely prediction that is not supported by the data. In order to gain further insights regarding these developments, we examine how the financial conditions of – and shocks propagated from – the Center Economies [dubbed CEs, namely the U.S., Japan, and the Euro area] impact the non-CEs economics. Extending our previous work (Aizenman et al., 2016), we devote special attention to the impact of currency weights in the implicit currency basket, balance sheet exposure, and currency composition of external debt.

Our empirical method relies upon a two-step approach. We first investigate the extent of sensitivity of policy interest rate, the real effective exchange rate (REER) and several other macro variables to those of the CEs while controlling for global factors. The estimation is done for the sample period is 1986 through 2015, using monthly data and in a rolling fashion. Next, we examine the association of these sensitivity coefficients with country's trilemma choices, the real and financial linkages with the CE, the levels of institutional development, balance sheet exposure, and the like. Using the methodology of Frankel and Wei (1996), we estimate the currency weights of the non-ECs economies, and study the impact of these weights on the transmission of shocks from the ECs to non-ECs countries (or peripheral economies, "PHs").

We find that for both policy interest rates and the REER, the link with the CEs has been a dominant factor for developing and emerging market economies [EMGs] in the last two decades. Furthermore, the developing and EMGs policy interest rates are more sensitive to global financial shocks around the time of EMGs' crises in the period surrounding the turn of the century, and again since the Global Financial Crisis [GFC] of 2008. In contrast with Rey's conclusions, we find that the type of exchange rate regime and country's currency weights or currency composition in international debt do matter: developing countries or EMGs with more stable exchange rate and more open financial markets are more affected by changes in the policy interest rates in the CEs. Exchange rate stability, financial openness, and IR holding are jointly significant for the group of developing or emerging market countries.

Distinct from our earlier results, we find evidence that the weights of major currencies, the extent of external debt, and the currency composition of debt are significant factors. Having a higher weight of the dollar (or the euro) enhances the responsiveness of a financial variable such as REER and EMP to a change in key variables in the U.S. (or the euro area). While having more exposure to external debt has similar effects on the financial linkages between the CEs and the PHs, the currency composition of international debt securities has a differential impact. Those economies more reliant on the dollar for debt issuance tend to be more vulnerable to shocks occurring in the U.S.

In what follows, we present the framework of our main empirical analysis in Section 2. Each of the two steps for the estimation is explained in this section. In Section 3, we present empirical results for the baseline estimations. In Section 4, we focus on the impacts of currency weights, trade with currency zones, external debt, and currency composition of international debt. We make concluding remarks in Section 5.

2. The framework of the main empirical analysis

Methodologically, we extend the same approach as followed in Aizenman et al. (2016), with special focus on different determinants of linkage strength between the CEs and the PHs. To recap, our analytical process is similar to the two-step estimations employed by Forbes and Chinn (2004). As the first step, we focus on the five possible linkages between the PHs and the CEs and investigate the degree of the sensitivity through those linkages. For each of the five linkages, we regress a financial variable of the PHs on another (or the same) variable of the CEs while controlling for global factors. In the second step, we treat the estimated degree of sensitivity as the dependent variable, and examine its determinants among a number of country-specific variables, including the roles of countries' macroeconomic conditions or policies, real or financial linkage with the CEs, or the level of institutional development of the countries. In this study, our discussion centers on the effect of variables pertaining to balance sheets of the sample countries such as external debt, the weights of major currencies in the currency basket, and the share of currencies for debt denomination.

2.1. The five linkages – the channels through which PHs are susceptible to changes in CEs' financial conditions

Before we investigate the linkages between the CEs and the PHs, we must identify what kind of linkages we focus on. In that regard, Fig. 1 is helpful. It illustrates how the variables of our focus tend to be more affected by spillovers of shocks around the globe. More specifically, the five linkages between the CEs and the PHs are as follows.

Link 1 – Short-term, policy interest rate in the CEs → Short-term, policy interest rate in the PHs: If country i has its monetary policy more susceptible to the monetary policy of one (or more) of the CEs, the correlation of the policy interest rates between the CEs and PHs should be significantly positive, implying a closer linkage between the CEs and PHs. However, a

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