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Our currency, our banks, your problem

On the ECB's relationship with New Member States
during and immediately after the crisis

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Our currency, our banks, your problem: on the ECB's relationship with New Member States during and immediately after the crisis

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Abstract: Lehman's collapse laid bare the fragilities of the cross-border banking model prevailing in Eastern Europe. It left CEE banking systems vulnerable to the deleveraging decisions of parent banks, and CEE central banks vulnerable to Euro shortages. This paper examines the relationship between ECB and New Member States, which it describes as 'Our Euro, our banks, your problem'. Using the lens of dependent financialisation in a hierarchical international monetary system, it argues that the ECB's position was riddled with conflicts of interest. The systemic role of the euro, tacitly encouraged before 2008, would have required the ECB to provide temporary support to CEE central banks. Yet its participation in bailout negotiation constrained its willingness to extend unconditional support, via swaps, to CEE central banks. While the ECB had no mandate to be either an official Troika negotiator or international lender of last resort, it interpreted the extensions of its mandate such that it reinforced its institutional position in the bailout mechanisms, at the expense of policy autonomy in CEE countries. The ECB harnessed its privileges as currency issuer to help enforce Troika policies and preserve the cross-border banking model that it views essential to its broader strategies of financial integration.

Key words: financialisation, cross-border banking, money hierarchies, ECB, Eastern Europe

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THE ABSTRACT OF THE PROJECT IS:

The research programme will integrate diverse levels, methods and disciplinary traditions with the aim of developing a comprehensive policy agenda for changing the role of the financial system to help achieve a future which is sustainable in environmental, social and economic terms. The programme involves an integrated and balanced consortium involving partners from 14 countries that has unsurpassed experience of deploying diverse perspectives both within economics and across disciplines inclusive of economics. The programme is distinctively pluralistic, and aims to forge alliances across the social sciences, so as to understand how finance can better serve economic, social and environmental needs. The central issues addressed are the ways in which the growth and performance of economies in the last 30 years have been dependent on the characteristics of the processes of financialisation; how has financialisation impacted on the achievement of specific economic, social, and environmental objectives?; the nature of the relationship between financialisation and the sustainability of the financial system, economic development and the environment?; the lessons to be drawn from the crisis about the nature and impacts of financialisation? ; what are the requisites of a financial system able to support a process of sustainable development, broadly conceived?

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1. Introduction

After 1989, CEE countries embraced financial globalization, often as a condition of EU membership. Early liberalizers (Baltic states, Czech Republic) removed most capital controls by 1997; the rest by 2006. Countries typically followed the same sequencing: first FDIs, more caution on interest-rate sensitive capital inflows, in particular non-resident access to short-term funding instruments and local currency asset markets. In fifteen years, CEE countries went from planned economies with state-owned banking sectors and embryonic, if any, financial markets to countries with fully liberalized capital accounts and, with few exceptions, banking sectors dominated by banks headquartered in the European Union (Austria, France, Italy, Greece). Transnational banks borrowed cheaply in international financial markets to fund affiliates in Eastern Europe that in turn fed – via foreign currency (fx) - loans household credit and real estate bubbles (de Haas and van Lelyveld 2011, Gabor 2012). Pressured by competition from foreign banks, locally owned banks increasingly resorted to foreign funding, borrowing from cross-border interbank markets or in local currency markets.

Lehman's collapse laid bare the fragilities of the cross-border banking model prevailing in the region. It left CEE banking systems vulnerable to the deleveraging decisions of parent banks, and CEE central banks vulnerable to a shortage of Euro and other more exotic currencies, in particular Swiss francs.

Against this context, this contribution explores the ECB's crisis policies in relationship to CEE countries. While scholarship on the topic is notably absent, this is an important question. Although the ECB did not have a mandate for bank regulation or financial stability – only formally institutionalized in the Banking Union – its crisis policies matter for three reasons. First, banking systems in the CEE region are dominated by Western European banks, whose asset and liability management made solvency a local problem and liquidity a regional (euro) issue. From this perspective, CEE central banks relationship to the ECB mirrored the ECB's relationship to the US Federal reserve: European banks had large exposures to dollar funding markets, just as CEE banking systems had exposures to euro funding markets and to the liquidity pressures of the parent banks. Second, before the crisis, an attitude of benign regulatory neglect towards cross-border banking practices coupled with an aggressive expansion strategy of Western

European banks left countries in Eastern Europe highly vulnerable to the transmission of financial shocks via cross-border banking channels, without institutional mechanisms to manage cross-border banking fragilities. Third, immediately after Lehman's collapse, CEE central banks were faced with a shortage of Euro (and Swiss Francs) that confronted the ECB with the demands of its role as a systemic central bank for the region.

When funding dried up in the global financial crisis, 'systemic' central banks together devised an unprecedented mechanism for global monetary policy making (Allen and Moessner 2010, ECB 2014). Faced with the new challenges of highly integrated markets and liquidity increasingly global, the G10 central banks introduced swap lines, providing liquidity in national currency to each other. Through the swap agreement, the two parties buy each other's currency, and reverse that transaction at a later date. While the terms of the swap agreement protect the two parties from exchange rate fluctuations, the risk that one of the parties will not be able to reverse the swap remains. The least concerned about such risks, the issuer of the world's dominant currency, the US Federal Reserve offered swaps to several large emerging countries where its banks had significant exposures (see Allen 2013). These swaps complemented the bilateral agreements between systemic central banks (Canada, US, UK, Eurozone, Japan and Switzerland), agreements that eventually morphed into a temporary, and then permanent swap network in October 2013.

In contrast, at the height of the banking crisis, the ECB was only prepared to provide currency bridges to central banks that it perceived to be its peers. For the first 12 months after Lehman, when its support was most needed, the ECB treated the central banks of the New Member States as Euro-area commercial banks, agreeing to lend Euros against (scarce) ECB-eligible collateral to Hungary (October 2008), Poland and Latvia (November 2008). In doing so, the ECB proved more conservative than Swedish, Danish and Swiss central banks (see ECB 2014, also Darvas and Pissany-Ferry 2008). It only – informally - agreed to a swap with two CEE central banks – of Hungary and Poland - late in 2009 (Vallee¹ 2010), once several CEE countries turned to the Troika (the IMF-European Commission-the ECB) for balance of payments assistance and to the Vienna Initiative as a forum for resolving home-host dilemmas underpinning the governance of cross-border banks. The CEE crisis – and its socio-economic impact - would have looked

1 <http://ftalphaville.ft.com/2010/03/30/191041/behind-closed-doors-at-the-ecb/>

differently had the ECB assumed the responsibilities of its systemic role. One crucial reason it failed to do so, the paper argues, is the crucial role that it has come to play in designing conditionality in Europe as part of the institutional arrangement of the Troika.

This report focuses on the relationship between ECB and New Member States, which it describes as 'Our Euro, our banks, your problem'. It theorizes and documents the drawbacks of a financial integration process that is generated on, and through, the balance sheet of foreign-owned banks. To outline the political economy of the ECB-CEE central bank relationship, the report uses the lens of dependent financialization, understood in the context of a hierarchical international monetary system (Mehrling 2011, Mehrling et al 2012). The term captures the emergence of new, de-localized, financial structures characterized by *cross-border interconnectedness*, *market-based banking models* and *financial fragility*. In a dependent, financialized money hierarchy, the central bank's control over monies at the top of the hierarchy is eroded by the cross-currency, cross-market activity of its banking sector. With ineffective policy instruments to shape the hierarchy, the 'home' central bank becomes dependent on the policies – and the institutional politics – of the issuing central bank. While full exchange rate flexibility would divorce base money creation from currency interventions, and remove scope for banks' arbitrage, such a policy choice is costly for central banks whose currency becomes increasingly financialized (currency trading driven by financial motives rather than international trade, see McCulley and Scatigna 2011). The pattern of financial integration that these countries have experienced since accession and then membership of European Union means that full exchange rate flexibility would have been accompanied by fast exchange rate appreciation (and stronger over-valuation). Indeed, the Eastern European experience demonstrates that central banks will eventually step in to prevent an excessive appreciation of the currency, be it driven by short-term inflows or FDI (privatization) related flows. Thus, a theory of the ad-hoc cooperation between central banks to mitigate currency shortages necessitates a clear specification of the financial relationships through which currency hierarchies interact and overlap, and the distinctive policy dilemmas these trigger.

In Eastern Europe, that dependency had an additional, if crucial, dimension, as the issuing central bank was, in many cases, also the central bank of the financial system where parent banks were headquartered. As predicted by politics scholars, enlargement did little to boost the prospects of the euro of an international currency, 'exacerbating



ambiguity at the expense of transparency and accountability' (Cohen 2007, p. 746). The ECB's position towards CEE countries was riddled with conflicts of interest. The systemic role of the euro in CEE countries, many on route to adopting the euro, would have required the ECB to provide temporary support for central banks when currency markets - dominated by financial institutions located in the Euro area – stopped working. Yet its participation in deciding bailout conditions, an overtly political role, constrained the extent to which it was willing to extend unconditional support, via swaps, to CEE central banks. While the ECB had no mandate to be either an official Troika negotiator or international lender of last resort via swaps, -it choose to interpret the extensions of its mandate in such a way that it reinforced its institutional position in the bailout mechanisms, but at the expense of policy autonomy in CEE countries. The ECB took advantage of its privileges as currency issuer to help enforce Troika policies and preserve the cross-border banking model that it views essential to its broader political strategies of financial integration.

Thus, transnational financial actors have become a powerful political and economic force in Eastern Europe, navigating and shaping uneven regulatory terrains in order to sustain new, market-based modes of profit generation. Thus, the systemic footprint of foreign-owned banks in CEE countries goes beyond lending and deposit taking, be it in domestic or foreign currency. As the Liikanen Report (2012) documented, transnational banking has changed profoundly over the last 30 years, marked by a collective migration to highly-interconnected, market-based activities including the production of tradable assets (through securitization and off-balance sheet instruments), leveraged proprietary trading, market making, and global management of asset and liabilities (also Haldane 2009²).

Market-based bank business models matter for CEE countries as resident banks intermediate capital inflows through several mechanisms (Gabor 2015). Aside from moving liquidity through internal capital markets, resident banks also enable non-resident financial institutions (hedge funds, asset managers, institutional investors) to enter the local currency (debt) markets of developing countries. Such intermediation of portfolio inflows often occurs 'in the shadows' of banking via off-balance sheet, over-the-counter transactions. It can create systemic vulnerabilities where non-resident investors tend to run for the exit when global funding conditions change. For instance, Hungary's OTC fx swap

² Haldane, A. 2009. "Rethinking the Financial Network." Speech at the Financial Student Association, Amsterdam.

market played a crucial role in the crisis as resident banks faced Euro shortages when non-residents liquidated government bond portfolios and closed fx swaps that were providing Euro funding to Hungarian banks.

The report is organized as follows. It first outlines the ECB's position on the international role of the Euro. It then examines the role that central banks play in shaping hierarchies of money, and connects this to dependent financialization. It then explores the agreements between central banks since 2008, set against the ECB's crisis interventions, to then focus on the ECB's relationship with CEE central banks. It concludes by considering the argument that responsibility for the mis-management of money hierarchies should be placed squarely at the feet of CEE central banks, whose choice of exchange rate regime and benign neglect of foreign currency lending created the type of vulnerabilities that the ECB swap could – but did not have to – address.

2. The Euro as international currency: 'our currency, our banks, your problem'

The introduction of the Euro ignited scholarly and policy interest about its potential role as international currency. Scholars predicted that the euro could (partially) displace the dollar, exploring the determinants of internationalization, defined as the increasing willingness of non-resident actors to accept and use the euro: economic stability to support the store of value function, openness to international trade and capital mobility to strengthen the use of the currency as international means of payment, deep and liquid financial markets to attract international investors' interest (Portes and Rey 1998, Goldberg 2010). Since its inception, the ECB (1999) began publishing an annual report on 'The international role of the euro' that documented the private use of the Euro as (i) an investment and financing currency; (b) payment and vehicle currency (c) pricing and quotation currency (goods and services) and (d) reserve, intervention and pegging currency.

The first report (ECB 1999) focused on the role of the euro as investment/financing currency and intervention/pegging currency. With respect to the former it cited approvingly the move by various large developed and emerging countries (Argentina, Brazil, Canada, the Phillipines) to issue euro denominated debt as a strategic decision to diversify portfolios out of US dollar. It also highlighted the important role played by the Euro as reserve and pegging currency in Eastern Europe, where several countries with exchange

rates previously fixed to the Deutsche Mark were now turning to the Euro. By 2008, the ECB's reports documented the importance of Euro denominated assets and liabilities on the balance sheets of banks in CEE countries. Indeed, the ECB showed that by 2008, banks headquartered in the Euro area generated more than 75% of foreign claims in New Member States, an evolution that was could not be explained away by monetary factors (exchange rate volatility or high inflation), but rather by the portfolio decisions of the Euro-area banks (ECB 2007). Put differently, Euro area banks' strategies in Eastern Europe were rendering the ECB a systemic central bank for the region. Yet the ECB refused to contemplate the financial stability implications of this systemic role beyond lip-service to international cooperation via BIS and other fora. Rather, it stressed that its neutrality towards internationalization trends, in that it was 'neither trying to hinder nor to foster its international use' (Hartmann and Issing 2002).

The benign neglect towards internationalization reflected the particularities of the ECB mandate in the pre-crisis Eurozone. This was narrowly defined around price stability, as Member States closely guarded the powers to regulate their financial institutions, often perceived as 'national champions' who needed a relaxed regulatory regime to withstand competition from US financial institutions. Yet the ECB – alongside Member States – encouraged European banks to expand, because of its explicit interest in accelerating financial integration, crucial for the effectiveness of monetary policy, particularly in light of the commitment of the New Member States to join the Economic and Monetary Union as soon as the convergence process allowed it. This drive for financial integration also fit well with the political consensus in old Member States that the aggressive cross-border expansion of the 'national champions' would help Europe ride the seemingly unstoppable wave of financial globalization (Jabko 2006, Mugge 2010).

Scholars and international organizations could hardly challenge this alignment of interests for Eastern Europe to embrace a bank-based mode of financial globalization. For example, as late as 2007, the IMF's European office published a paper stressing the differences between Latin American/East Asian vulnerabilities and Eastern Europe. In it, the head of the Europe office dismissed concerns that the striking parallels with East Asia (large current account deficits funded by cross-border lending, accompanied by housing and credit booms) had any systemic implications (see Bluestein 2015). Rather, Eastern Europe was experiencing a convergence-driven boom that should not be confounded with

a bubble, as the financial institutions that were lending to CEE countries had learnt the lessons from past crises in developing countries and were not repeating the mistakes (see Abiad et al 2007).

Only well into the crisis, once the ECB's systemic role became apparent, did scholars turn their attention to the role that financial stability – defined broadly to include policy and institutional framework – play in the international status of a currency (Goldberg et al 2014)³. Before and during the crisis, central banks in Eastern Europe were alone in confronting the implications of a bank-driven internationalization of the Euro (and Swiss Franc) in their financial systems.

3. Central banks in dependent financialization

This section explores practices of central banking during upswings of global financial cycles and how these relate to the specific fragilities of dependent financialization. It argues that central banks play an important role because these manage and maintain the mechanisms that produce financialized behaviour. Public policies ease the entry of impatient finance with short-term horizons (through capital account liberalization), enable their exit (through the central bank's liquidity management strategies), provide supporting regulatory environments and in general, endorse new financial practices in the name of financial deepening and enhanced market liquidity. Central banks operating in financial systems that are closely integrated in international financial markets worry primarily about capital account management, rather than inflation targeting.

The section outlines how central banks' liquidity management strategies on the interbank money market interact with trading-based modes of profit generation and in particular, the financialization of money and currency market structures. Thus, currency markets no longer reflect international trade in goods and services but capital flows driven by cross-currency risk trading (McCauley and Scatigna 2011). Currencies become financialized. Similarly, interbank money markets no longer reflect demand for, and supply of, reserves arising from settlement needs in traditional deposit taking and lending activity (see Bank of England 2014) but instead the interplay of capital inflows and the central bank's capital account management strategy. Non-resident demand for government bond

³ <http://www.voxeu.org/article/new-thinking-reserve-currency-status>

markets is closely linked to the liquidity of derivative segments of currency markets. Markets became financialized quantitatively (rapid growth, increasingly liquid) and qualitatively (structural changes in demand and supply conditions driven by trading-based banking).

Thus, cross-border financial integration has re-ordered domestic money hierarchies and confronted central banks with a dilemma: restricting the provision of bank reserves – lender of last resort liquidity – in order to prevent speculative attacks and excessive depreciations of the domestic currency may come at the expense of punishing those domestic banks that still follow a traditional, relationship based banking model.

3.1 On central banks and hierarchies of money

Heterodox economists define money as a debt relation. Going back to Keynes (1930) and Minsky (1986), money is conceived as a two-sided balance sheet phenomenon (Bell 2001), a social relation that alters both assets and liabilities. Money thus solves an acceptability problem, embodying a promise to accept each other's debt. However, not all money is created equal – money is inherently hierarchical (Mehrling 2012). Some promises will be less acceptable than others (Foley 1987), some issuers are more credible than others (Mehrling 2012). A (debt) promise becomes money as an increasingly large number of individuals and institutions accept it.

The scholarship on money hierarchies has roots in distinctive, and sometimes conflicting, schools of thought. Yet these contributions converge in agreeing that money is a social relation, and that there is a hierarchy of monetary liabilities marked by different degrees of acceptability. For instance, Duncan Foley's (1987) 'Money in economic activity', while explicitly concerned with Marxist questions about commodity money, engages with Keynesian and Minskyan ideas about the changing space of monetary liabilities and what distinguishes 'money proper' from credit claims. Similarly, Bell (2001), Wray (2006) and Mehrling (2012) reference Duncan Foley's work on hierarchies of liabilities as one of the first extensive contributions. Where the theoretical differences come to matter is in the emphasis placed on liabilities at distinctive levels of the hierarchy. Thus, this contribution does not intend to reconcile the distinctive theoretical positions on money out there, but rather to draw on the analytical lens of the money hierarchy to explore the re-ordering of

money hierarchies produced by Eastern Europe's particular pattern of integration in international financial architectures.

Early theorizing of monetary hierarchies drew on Chartalist ideas. Building on Minsky (1986), Foley (1987) and Wray (1990), Bell (2001) proposed a simple hierarchy where state liabilities (state-issued fiat money) are at the top of the pyramid, followed by bank liabilities, the debt of firms and of households. Money is a 'creature of the state' in that the state has the unique power to define what is acceptable means of discharging tax liabilities (Wray 1990). The distance from the apex represents the varying degree of acceptability, fundamentally depending on how readily convertible private promises are into state money. Firms' debt (bonds) and state promises in the form of government bonds occupy a lower position in the hierarchy because these are less liquid than bank money and currency. Yet Minsky's insight that 'the space of monetary liabilities shifts continuously in its properties, as new liabilities are invented' (Foley 1987: 261) to meet the needs of structurally evolving economies, is downplayed. By tracing money back to the taxation power of the state, Bell (2001) eschews questions of why new forms of money appear, and how they re-order money hierarchies or (de)stabilize them.

Mehrling (2012) closely examines the dynamic properties of money hierarchies. Using a simple hierarchy, he asks what constrains the expansion of money claims at different tiers in the hierarchy. This brings to the fore the relationship between the institutions that issue credit/money, and the constraints that govern those relationships. One basic disciplinary constraint arises from *the means of settlement* function of money: institutions settle payments with monies issued higher in the hierarchy (central banks in gold, banks in reserves, firms in bank money). Thus, 'the availability of money from the level above serves as a disciplinary constraint that prevents expansion' (p. 8). Issuers at every level can influence monies below but not increase directly those above. That is not to say that causality runs entirely one way (down) through the hierarchy – that would validate a monetarist understanding of money and central banking – but that expansion and disciplinary constraints are mediated by institutional factors and the prevailing monetary theory. For example, it is now accepted that the central bank meets commercial banks' demand for reserves at a price consistent with its targets for economic activity or inflation (Bank of England 2014).

Thus, commercial banks can create private money with price, rather than quantity, constraints from the monies higher in the hierarchy (bank reserves). Innovation seeks to relax or circumvent disciplinary constraints higher in the hierarchy.

Mehrling (2012) stresses that the moneyness of debt claims fluctuates. Credit is inherently unstable, as debt relationships are inextricably bound up with uncertainty. While moneyness embodies a promise to trade at par on demand with money at higher levels, crises test this promise and the credibility of the institutions behind it. Historically, central banks have stabilized simple hierarchies by using their balance sheet to defend par convertibility of bank deposits, providing banks with funding liquidity through the lender of last resort function. Central banks can do so because their liabilities retain moneyness in crisis, since central banks have no liquidity constraint (at least not in their own currency). The liquidity challenge, Mehrling suggests, is a challenge to 'make good on the promised monetary qualities of liabilities' (p.11).

This logic can be extended to the international monetary system, inherently hierarchical (see Bernes et al 2014, also Mehrling 2013). At its apex is the US dollar (the world's reserve currency). International money markets ease settlement constraints, providing liquidity to settle net payments between countries during normal times but cannot absorb fluctuations during crisis. In crisis, central banks backstop their own money markets and via swaps, provide foreign currency to each other in order to allow their private financial institution to meet foreign liabilities. Central bank in key financial centres thus create –temporary or permanent - mechanisms of cooperation necessary for the preservation of the international payment system (see ECB 2014).

However, not all currencies are created equal. Backstops in the international monetary system are hierarchical. In an environment of free capital flows, the search for yield may affect countries lower in the international hierarchy. East Asian and Eastern Europe offer pertinent examples of central banks that choose to expand balance sheets in order to mitigate the potential destabilizing consequences of volatile cross-border positions, particularly if these are funded in currencies of systemic central banks (see Ma et al 2011, Gabor 2015). This reorders national money and credit hierarchies. Central bank interventions in currency markets relax settlement constraints because banks can obtain reserves via currency markets rather than the interbank money market. This in turn

highlights the analytical importance of the relationship between the institutions that issue credit/money, and the constraints that govern those relationships.

3.2 Relaxing the constraints on reserve creation

Our traditional understanding of central bank's power to influence monetary conditions in the economy relies on the central bank's role as monopoly creator of reserves for its counterparties, the banking sector. Commercial banks settle obligations to each other in reserves created by the central bank. That is, the reserves created by the central bank are money between commercial banks, whereas the deposits created by commercial banks are money between non-bank economic actors, including non-bank financial institutions (without an account at the central bank) and the public at large. The central bank's control of money at the top of hierarchy acts as a constraint – although does not determine – the pace of credit creation via the interest rate that the central bank sets on reserves. Indeed, the now vindicated position of Post-Keynesian economists in the monetarist-endogenous money debates stressed that banks lend first, and then find reserves (Lavoie 2000, Dow 2004). This lending-based model of banking generates a structural deficit of reserves of the interbank money market – banks lend, lending creates deposits, and demand for reserves as means of settlement (see Bank of England 2014). The central bank can choose not to accommodate this structural deficit, but if it does so, it will create scarcity on the interbank money market that pushes interest rates up, tightening monetary conditions above its interest rate target. Thus, the central bank chooses a price target for reserves trading in the interbank money market, and stands ready to enforce that target in the market via open market operations. Commercial banks create private money with price constraints from the monies higher in the hierarchy (bank reserves). Central banks create public money (reserve) to meet endogenous needs of national depository institutions.

It is tempting to infer that this model of central banking and money creation applies particularly well to formerly planned economies, where money and capital markets are yet to reach the depth and liquidity of those in high-income countries, so that banks continue to pursue the traditional business of banking – lending to the real economy and funding 'real' assets via retail deposits. Indeed, this is the approach of most studies exploring what went wrong in Eastern Europe after Lehman: banks that extended credit to households

and businesses buoyed by the 'convergence' process (see Berglof et al 2009, IMF 2012). However, it is recognized that the story is made somewhat more complex by financial globalization – banks lending in foreign currency and funding those fx assets by borrowing abroad, from cross-border markets or parent banks. Yet scholars argue that this model of European financial integration via international banking groups ultimately proved to be a source of resilience for Eastern Europe. Foreign ownership of the banking sector 'softened the blow of capital outflows', prevented countries from sliding into crisis populism that so often derailed reform since 1990, and thus preserved economic and political stability in the region (Berglof et al 2009).

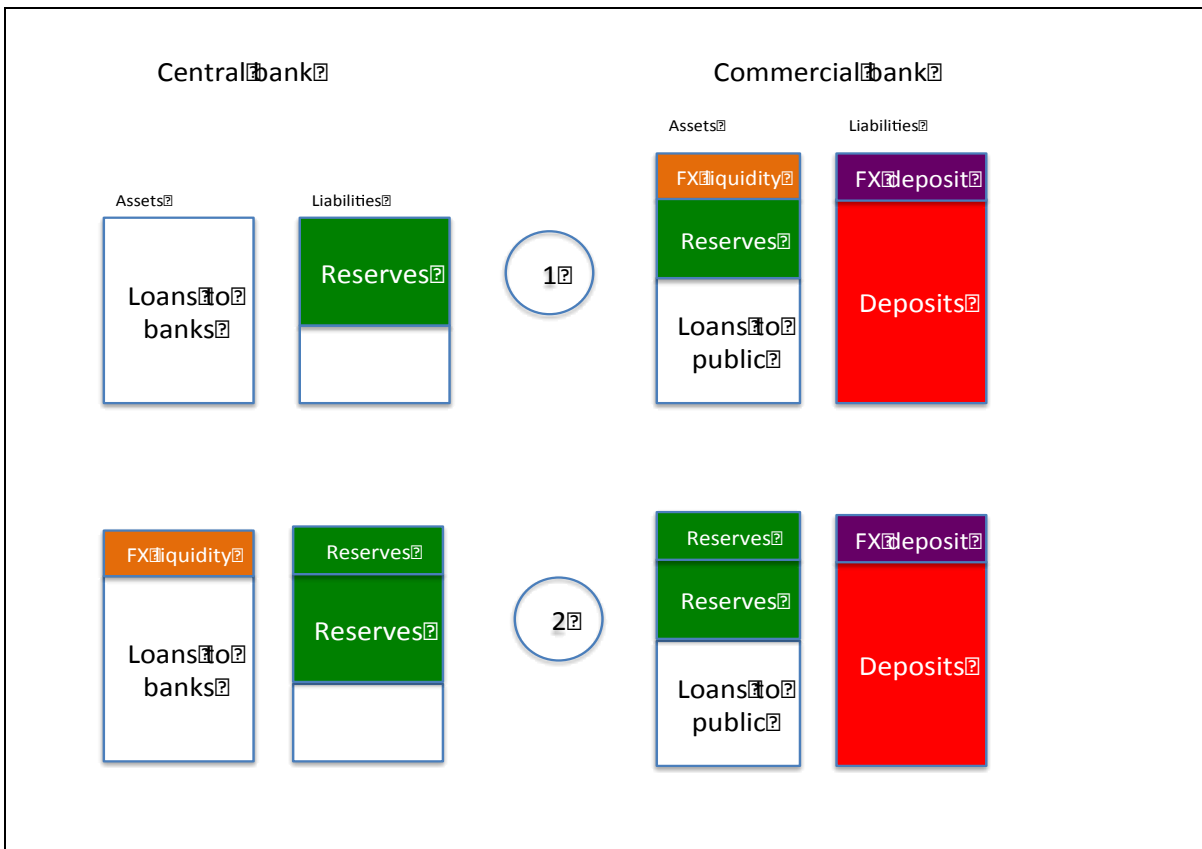
However, a critical examination of what foreign banks do in Eastern Europe suggests that traditional theories of central banking and their role in shaping money hierarchies are ill-equipped to capture the nature of central banking in small, open economies deeply embedded in international financial networks. The starting point is to notice that central banks across the region, similar to central banks of countries in Asia and Latin America, create public money by accumulating foreign reserves (be it through direct interventions in currency markets, or by acting as the foreign exchange agent of the state, providing domestic liquidity in exchange for privatization receipts or official inflows). Foreign reserve accumulation in countries that receive large capital inflows typically occurs to protect the exchange rate from appreciating excessively.

Consider the traditional process of money creation (see Bank of England 2014). In response to demand for credit, banks lend. When extending a mortgage loan, Bank A simultaneously creates a deposit for the borrower, a promise to pay on demand. The borrower in turn can use that deposit – Bank A's promise to pay – in order to settle its own purchase of a house. It transfers that deposit to the house seller at Bank B. This is where the role of reserves as means of settlement between banks becomes important. Bank B assumes Bank A's promise to pay (its liability) if Bank A also provides a corresponding asset, that is, bank reserves. To settle its obligation to Bank B, Bank A uses either its own reserves, or if it doesn't have enough, it borrows these from the interbank money market, accumulating an interbank liability in lieu of the mortgage borrower's deposit. Thus, the price of reserves acts as a constraint for Bank A's lending. By construction, the interbank money market will be in structural deficit of liquidity, allowing the central bank to control its price by supplying reserves to the market. In crisis, Bank A's interbank liabilities may come

under pressure as its lenders refuse to roll over credit, and the central bank steps in to provide lender of last resort liquidity. Bank A needs acceptable collateral to access lender of last resort liquidity. If bank A wants to increase lending without running down reserves, it must attract new deposits.

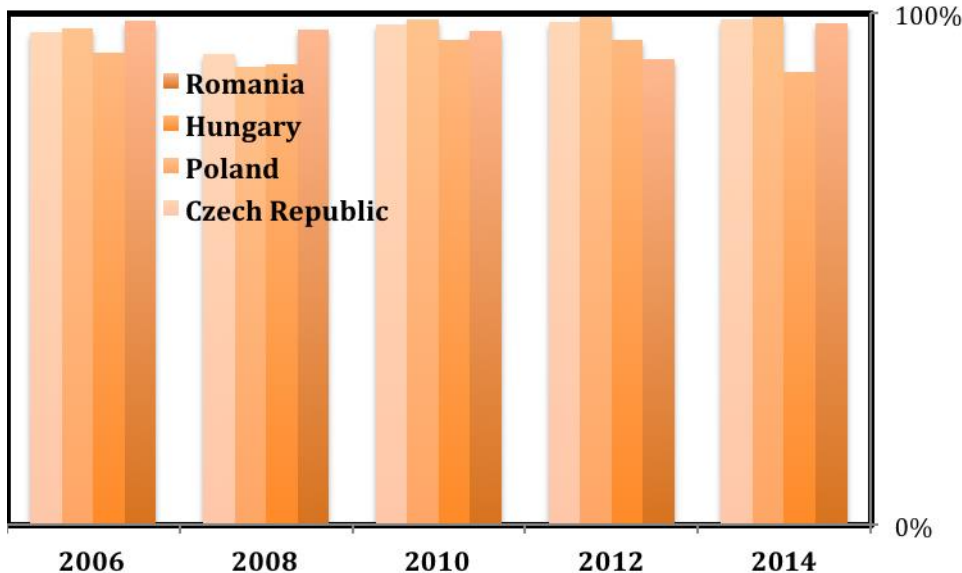
But commercial banks can erode these constraints by borrowing abroad. Consider Bank A, whose parent bank is located in Euroarea. Bank A accepts a Euro deposit from its parent bank, on which it pays EONIA and a risk spread. On its balance sheet, its fx liabilities have increased, and so have its net foreign assets (fx liquidity, in stage 1 of graph 1). Bank A then sells the fx liquidity to the central bank who in turn wants to avoid excessive appreciation of the domestic currency. By exchanging the fx liquidity with the central bank, Bank A has increased its reserve assets *without* paying the domestic interbank interest rate, but rather the rate on the fx deposit (in stage 2 of the graph). In developing countries, that interest rate differential is substantial, and can act as an incentive for the banking sector to intermediate capital flows. The more the banking sector intermediates capital inflows, the more it disconnects domestic reserve creation from the endogenous needs of depository institutions generated via lending. This puts the central bank in an uncomfortable position, since its price stability mandate is predicated on its ability to influence aggregate demand via its policy rate. But if the policy rate no longer sets the cost of obtaining reserves on the interbank money market, then its policy framework will come under increasing questioning.

Figure 1 Money creation through accumulation of fx reserves



A cursory look at the asset side of central bank's balance sheets in CEE countries confirms that reserve creation is driven by fx reserves, both before and since the crisis. Indeed, direct reserve lending to banks amounts to less than 15% of central bank assets, with under 5% for Poland and the Czech Republic. The relative increase of direct lending in 2008 reflects frozen interbank money markets that pushed commercial banks with a deficit of reserves (those without access to foreign lending or unable to renew foreign borrowing in crisis) to borrow reserves from the central bank.

Figure 2 Share of foreign assets in total assets of the central bank, selected CEE countries



Source: Joint External Debt Hub

Banks in Eastern Europe, both foreign and domestic owned, have used cross-border relationships to relax the disciplinary constraints higher in the hierarchy of money creation, endogenizing not only the quantity of reserves higher up in the hierarchy, but its price. However, this does not imply that there are no constraints on money creation, but rather, that the constraints arise from *a different hierarchy* – of the funding currency - over which the central bank has no control.

Thus, a theory of the ad-hoc cooperation between central banks to mitigate currency shortages necessitates a clear specification of the financial relationships through which currency hierarchies interact and overlap, and the distinctive policy dilemmas these trigger. The price constraint of reserve creation underpinning bank money can only be eroded if commercial banks have market access to foreign currency. In crisis, that access may be curtailed by uncertainty, leaving central banks with a *simultaneous* domestic and foreign liquidity problem.

In order to capture the systemic implications of a money hierarchy where the central bank creates reserves via fx reserve accumulation, it is important to focus on the financial relationships that intertwine currency hierarchies. Gabor (2015) proposes an analytical framework based on understanding the financial system as a network of connections. This

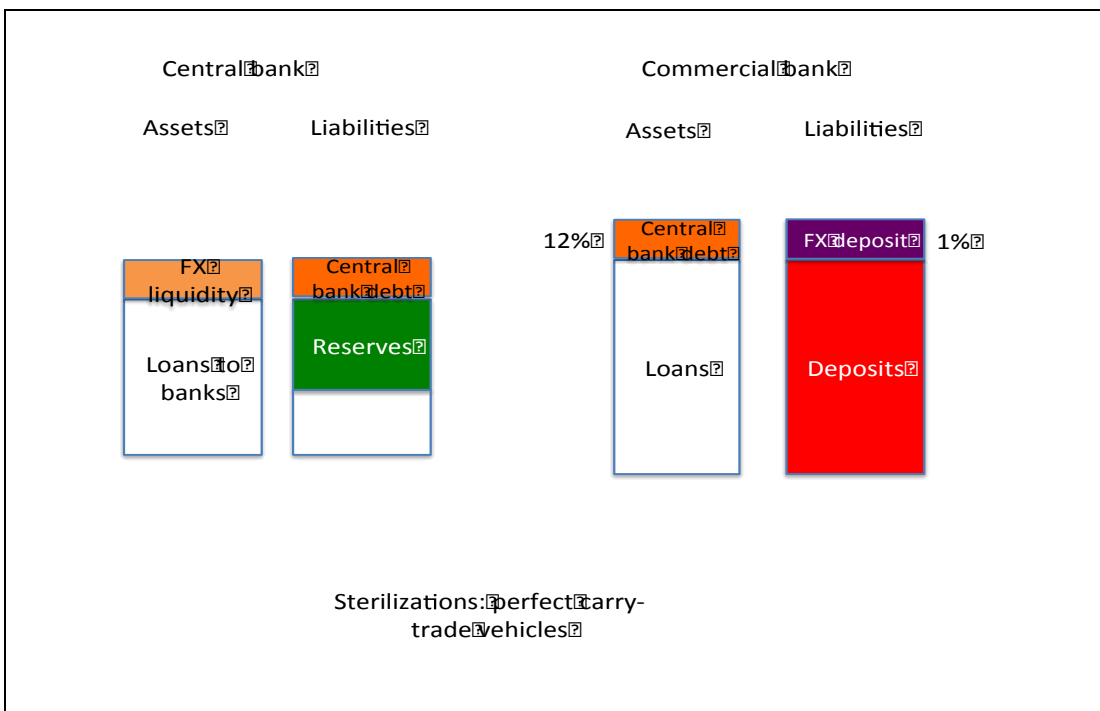
approach builds on the critical interconnectedness scholarship developed in response to the crisis. Bank of England's Andrew Haldane (2009) suggested that financial systems should be approached analytically as complex, adaptive systems and transnational banks as 'super-spreaders' of systemic risk that arises from a collective migration of bank business models from the relational one described above to the so-called 'market-based' banking model (see Hardie et al 2013). This entails higher-risk, higher yield trading activities in new markets and with new instruments, frequently off-balance sheet (see also Bruno and Shin 2014). Sharp increases in leverage strengthen interconnectedness and financial fragility since banks (and other financial intermediaries) can only increase aggregate leverage by transacting more with each other in short-term wholesale funding markets (Yellen 2013). The converse is true in a downturn, as bank lending and bank leverage are pro-cyclical. This model of leverage *cum* interconnectedness matters for CEE countries, as the leverage cycle of the 'super-spreaders' determines the pace and volume of capital flows into their banking systems (Bruno and Shin 2014). Gabor (2015) identified three systemic connections at the core of a 'dependent' money hierarchy.

(a) Protective connections arise when the *central bank's* interventions to protect the domestic currency from appreciation pressures enables *resident banks* to obtain reserves without paying the interbank market rate. As explained above, once the central bank undertakes currency market interventions in response to large capital inflows, it relinquishes influence over the domestic interbank money market, and with that, its influence over private financial relationships through non-regulatory means (cost and availability of funding). It creates a structural surplus of reserves, however distributed *asymmetrically*. Resident banks with access to foreign funding via parent banks or international money markets will have a structural excess of domestic liquidity, whereas banks following a local, relationship-based, banking model rely on interbank money markets to meet their reserve (as means of settlement) needs.

To understand the actions of a central bank in an fx-driven policy regime, it is important to explore the challenges it faces when it creates reserves through fx accumulation. The accumulation of fx liquidity poses a problem for the conduct of monetary policy, since higher reserves in the system puts downward pressure on the interbank interest rate, relaxing monetary conditions. Since the policy rate no longer sets the cost of obtaining

reserves on the interbank money market, the legitimacy of the central bank's policy framework – interest rate manipulation to target price inflation - will come under increasing questioning. The central bank has no option but to seek to re-gain influence over interbank money markets by sterilizing the impact of its fx accumulation, that is, by absorbing the reserves that it provided commercial banks (see Figure 3). To do so, it can, for instance, issue its own debt and sell it to bank A (or sell government bonds to the bank, or take a deposit). Thus, Bank A now has a (risk-free) domestic currency asset that yields the policy rate funded with an fx deposit.

Figure 3 Central bank sterilizations - a carry trade vehicle



In the literature, the practice of funding high-yielding assets by borrowing in a low-yielding currency is known as a carry-trade (see Curcuru et al 2010). The only remaining risk is the risk that the domestic currency depreciates, making fx funding more expensive, and potentially unprofitable. However, in Eastern Europe, it was widely believed before the crisis that currencies could only appreciate due to convergence and the Balassa-Samuleson effect (see Abiad et al 2007). Where banks did not find this convergence story persuasive enough to shape their investment strategy, they would use derivatives to close the open fx position. Foreign-owned banks would typically be in a position to do so without

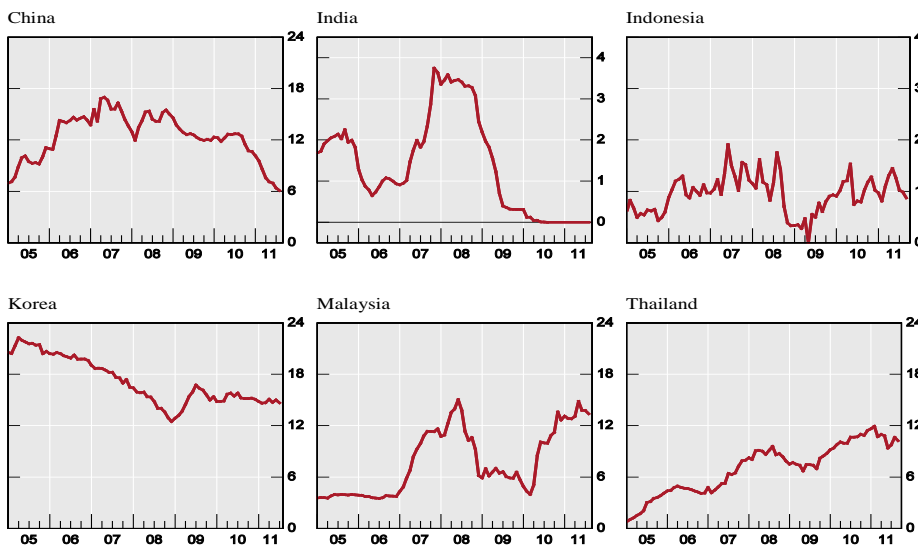
eroding profit margins from the sterilization carry. Backed by the parent bank, the resident bank may be a market maker in derivatives, and thus able to charge other derivative counterparts a bid-ask spread (Lindo 2014).

The central bank's strategy thus supported banks' currency market activities. The institutional incentives at play make it difficult for central banks to contemplate far-reaching reforms or to recognize that benefits are cyclical, *a la* Minsky. Indeed, central banks benefit from banks' intermediation of capital inflows because these appreciate the domestic currency and keep import prices low. This is why central banks may deliberately encourage capital inflows with their sterilization strategy, offering risk-free assets funded through fx liabilities (Gabor 2012; Paineira 2012; also Ostry et al 2012). Other policy makers, such as governments, also benefit because banks' demand for domestic public debt increases market liquidity and lowers public debt yields, albeit cyclically.

Indeed, BIS data shows how pervasive this central bank strategy has been across Asian countries confronted with large capital inflows. The volume of debt securities issued by central banks in China, Korea, Malaysia and Thailand rose above 10% of GDP in the run up to Lehman and has remained high since (see Figure 4).

Figure 4 Sterilization via central bank securities, Asia.

Graph 2 Central bank securities¹, as a percentage of GDP²

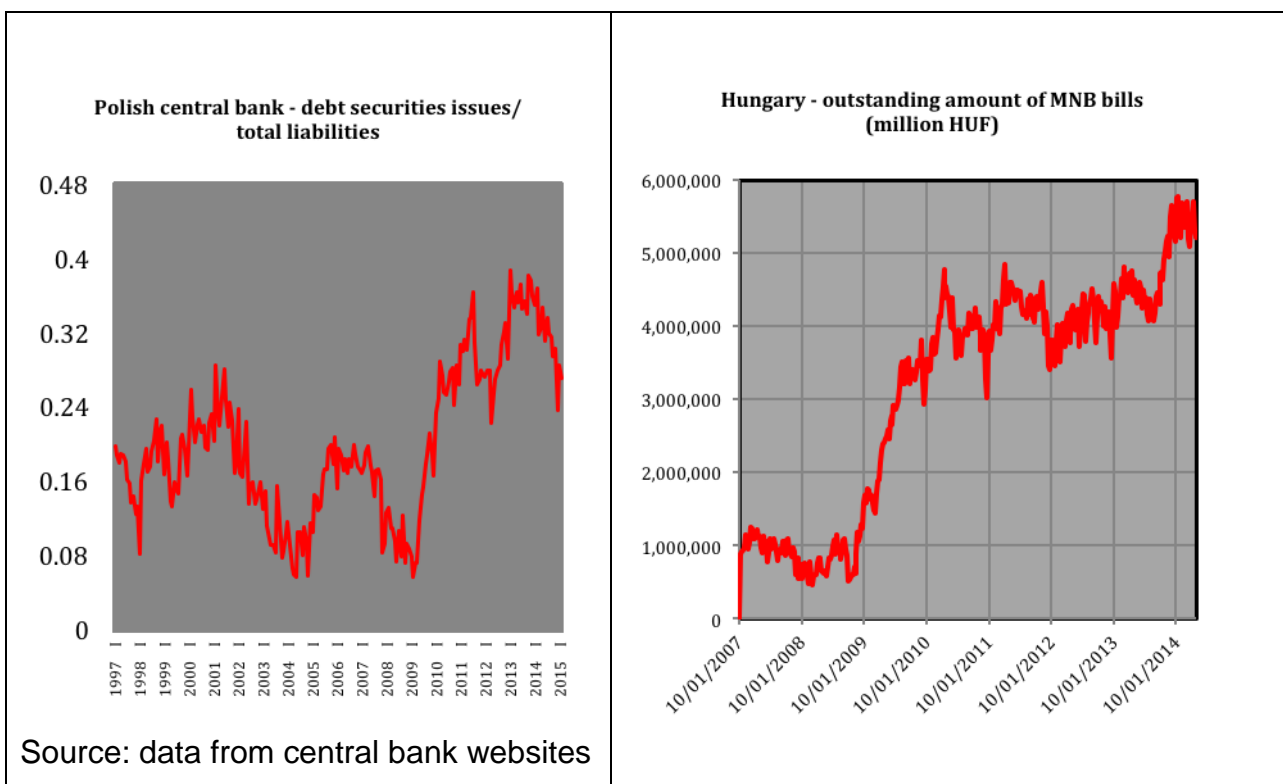


¹ For India, proceeds from auctions of treasury bonds and securities under the market stabilisation scheme, deposited at the Reserve Bank of India. ² The scaling variable used is annual GDP data converted to monthly using linear interpolation.

Source: BIS (2011).

Central banks in Eastern Europe implemented a similar sterilization strategy. Where data is available, it shows large sterilization operations (see Figure 5). It is likely that this data underestimates the actual sterilization volumes, since central banks can deploy a broad range of instruments to absorb the liquidity created via fx accumulation. For example, the Romanian central bank does not issue tradable debt instruments, but instead takes (unsecured) deposits from resident banks, deposits remunerated at the policy rate.

Figure 5 Sterilization via central bank securities, CEE countries



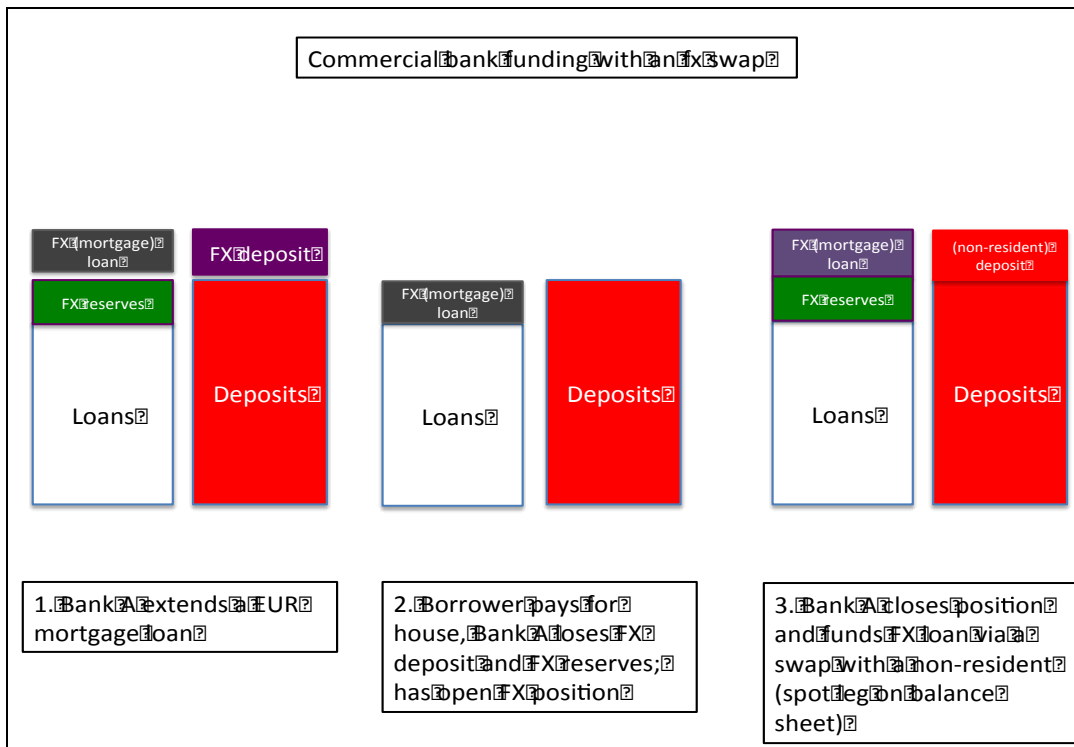
(b) **Bank-to-bank connections** stem from cross-border banking flows through which *resident banks* borrow from *parent banks*, if affiliated to transnational banking groups, or from cross-border interbank markets. Parent banks compare profitable opportunities in different jurisdictions (contingent on regulatory and tax regimes) and move funds from low to high profitability jurisdictions, commonly without much regulatory interference. These feed credit bubbles that unravel when cross-border funding dries out (Cettorelli and Goldberg 2011; Kudrna and Gabor 2013). For example, only East Asian countries worried about credit booms and took measures to curtail them before the crisis (see

Gabor 2012). In European countries, regulators realized that they knew little of what was going on inside or between global banks that typically had thousands of affiliates operating in many countries (Cerutti et. al 2010).

- (c) **Shadow connections** emerge when *global non-bank financial institutions* (hedge funds, asset managers, institutional investors) enter the local currency (debt) markets of developing countries. They often occur 'in the shadows' of banking via off-balance sheet, over-the-counter transactions. Yet the contours of these shadows are traceable because they cannot do so without the liquidity provided by *resident banks*. When motivated by carry-trade strategies, shadow complementarities are distinctly fragile, since non-resident investors unwind carry positions quickly in response to changing conditions in international financial markets (Kaltenbrunner 2010; Curcuru et al. 2010). JP Morgan indexes for emerging and frontier countries suggest these are the fastest growing cross-border financial linkages post-crisis. Indeed, most capital controls that developing countries have introduced since 2009 focus on restricting non-resident carry-trades.

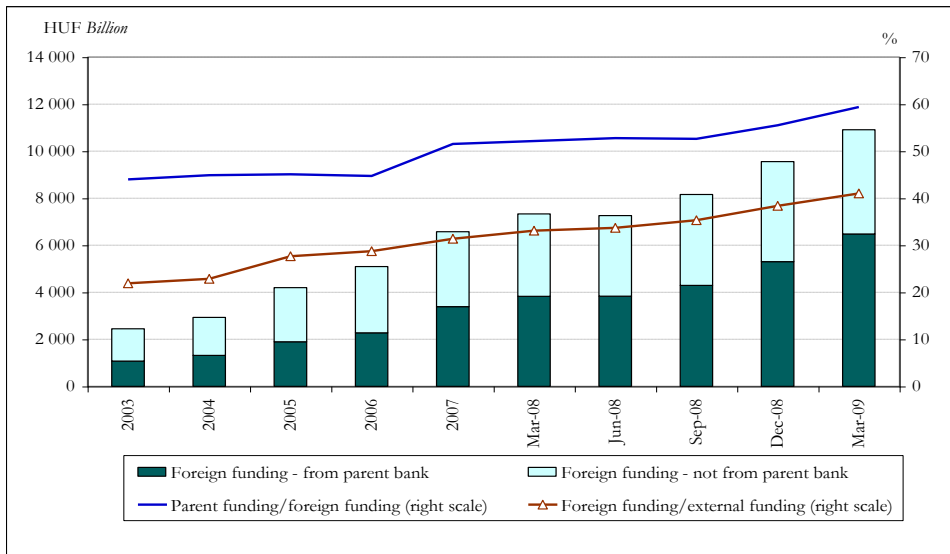
Even more puzzling for the traditional money creation story, it is possible for banks to create *foreign* money. Consider this scenario – widespread in Eastern Europe (see Pales et al 2011 for Hungary). Bank A extends a mortgage loan in Euros, providing more favourable lending conditions than it would for a mortgage loan in domestic currency (see Figure 6). In doing so, it simultaneously creates a deposit for the borrower – that is, a promise to pay denominated in Euros. When the borrower pays for the house, her deposit moves to Bank B in the account of the house seller. Bank A has to settle that transfer of liability by providing bank B with fx cash(1). Thus, it faces an fx reserve constraint. It also has an open fx position, since it is funding its fx loan with domestic currency deposits (2). A swap with a non-resident financial institution allows it to close its open fx position and replenish its reserves. In the spot leg of the swap, the commercial bank buys Euros and sells domestic currency, creating a domestic currency deposit for the non-resident. The forward leg of the swap is off-balance sheet. The non-resident can use the deposit to purchase government securities, rolling over the swap.

Figure 6 Funding via fx swaps



This strategy is important because it opens up foreign funding sources for locally-owned banks that would otherwise find it difficult to tap international money markets. Local banks confronted with competitive pressures from foreign-owned bank can thus overcome the difficulties of not having a parent bank that can channel cheap funding through internal capital markets. The case of Hungary illustrates this point well (see Figure 7). Between 2002 and 2008, cross-border banking loans quadrupled. The main driver of this rapid increase in cross-border liabilities was borrowing from parent banks. However, funding from non-resident institutions targeting local currency debt markets accounted for a substantial share, of around 40% of total foreign funding by 2008.

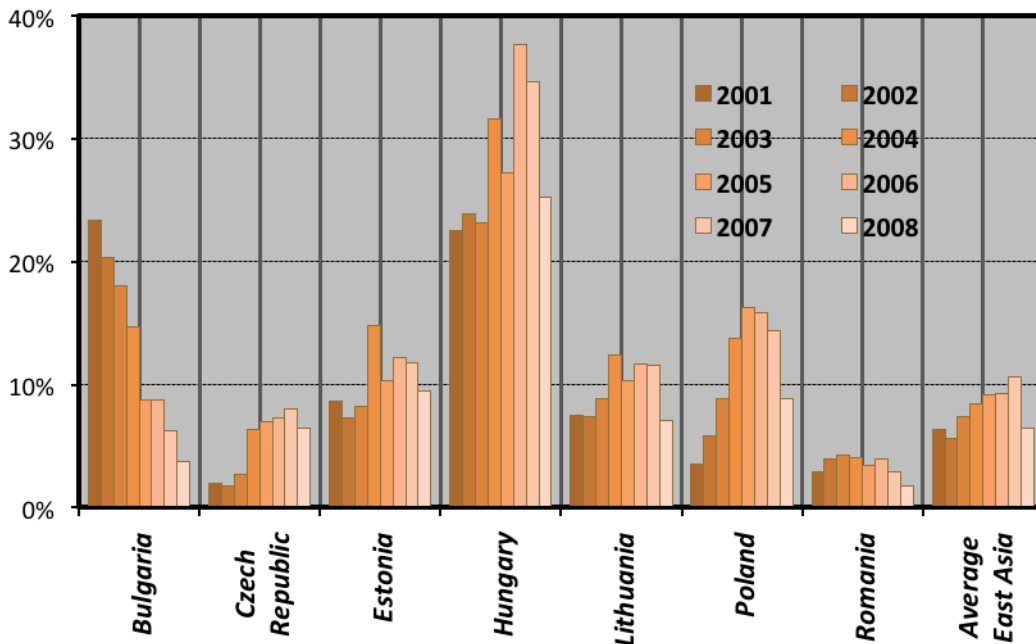
Figure 7 Cross-border exposure of Hungarian banks, 2003-2009



Source: MNB.

Furthermore, non-resident activity in currency markets also enables their access to domestic liquidity necessary to take positions in domestic asset markets (government or corporate bonds, equity markets). Indeed, non-resident investors became increasingly important in the local currency markets of CEE countries before 2008, their presence more significant than the average for East Asian countries (see Figure 8). Notably, Hungary and Poland saw a rapid increase in the share of debt instruments held by non-resident investors, in Hungary rising to around 40% by 2008, followed by Poland and Estonia.

Figure 8 Non-resident holdings of local debt, share of GDP, 2002-2008



Source: Joint External Debt Hub <http://www.jedh.org>

The presence of non-resident investors can increase the liquidity of local capital markets and reduce long-term interest rates. However, where these investors are motivated by carry-trade strategies, such benefits can turn out to be cyclical, and to engender systemic vulnerabilities through two channels: investors liquidate positions quickly, harming asset market liquidity and pushing up premiums, and withdraw funding lines to local banks through currency swaps.

In sum, resident banks' market activities contribute to the increasing financialization of currency markets (the currency becomes an asset class, trading in increasingly greater multiples of international trade, increasingly off-shore) and interbank money markets (structural excess of liquidity, asymmetrically distributed, as central banks create domestic liquidity by purchasing foreign currency from fx-rich banks). This re-orders domestic money hierarchies and creates difficult dilemmas for home central banks. The traditional crisis interventions - liquidity injections into money markets to mitigate uncertainty – lose effectiveness since the central bank needs to provide foreign currencies to domestic counterparties, and in doing so, it tightens liquidity conditions on money markets. In this scenario, the financialization of interbank money markets is damaging for 'patient' (relationship-based) banks who do not possess excess reserves from fx activity. Thus,

large capital outflows play out in the interbank money market, where central banks are forced to tighten liquidity conditions to prevent potential speculative pressures⁴, while simultaneously coordinating with central banks of core countries in order to address currency specific shortages.

4. The ECB and institutional innovations in financialized capitalism

Currency specific shortages are an important, if under-theorized, feature of global finance. In Eastern Europe, bank-led carry-trades into asset markets and retail credit (fx housing and consumption loans) funded by parents left domestic banking systems reliant on fx funding. When funding dried up in the global financial crisis, an unprecedented episode in global monetary policy-making and coordination ensued. Central banks formed swap networks to provide liquidity in foreign currency to foreign banks, and in national currency to foreign central banks. The existing literature on the ECB's crisis actions broadly agrees that the specific design of its emergency liquidity interventions coupled with a poorly designed institutional architecture put CEE countries at distinctive disadvantage. The ECB only agreed to formalize swaps with CEE central banks one year after the collapse of Lehman Brothers, leaving CEE central banks with little access to Euro liquidity beyond their fx reserves. In response, several central banks were prepared and did implement controls on outflows. The Vienna Initiative has to be understood in this context.

4.1 The ECB's Euro interventions since 2008: a brief outline

First, it is important to have a brief overlook of the various crisis measures that the ECB adopted after the collapse of Lehman Brothers. Liquidity interventions crisis often changed trajectory, reflecting the complex political context of the ECB's policy framework on one hand, and the on-going attempts to create, at European level, an institutional framework well-equipped to address banking or sovereign risk on the other hand. The ECB combined bank-based with market-based approaches to liquidity injection, that is, it lent against collateral, on extraordinary terms, or it intervened directly in asset markets. It unsuccessfully attempted on at least three separate occasions to exit its extraordinary

⁴ See IMF (1997). Capital flow sustainability and speculative currency attacks. <https://www.imf.org/external/pubs/ft/fandd/1997/12/pdf/imfstaff.pdf>

crisis measures (see Table 1). As Figure 9 suggests, liquidity injections through long-term repo operations played a far greater role, in quantitative terms, than outright asset purchases.

Table 1 The ECB's crisis policies

	Nature of commitment	Expected interactions with funding markets
Bank-based crisis measures (start date)		
Enhanced credit support (Oct 2008)	Full-allotment, longer maturity (3 to 6 months), relaxed collateral requirements	Improve good/bad collateral ratio given collateral discrimination in European repo markets
LTRO I (May 2009)	Three, one-year, LTRO, June, Sept. and Dec. 09;	Lengthen liquidity planning horizon (Trichet, 2009)
LTRO II (May 2010)	One, 6-months, LTRO (May 2010)	Address tensions in markets for collateral and possible contagion
LTRO III (October 2011)	Two, one-year, LTRO (Oct. and Dec. 2011)	Mitigate scarcity of eligible collateral (Draghi, 2011).
LTRO IV (December 2011)	Two, three-year LTRO (Dec. 2011 and Feb. 2012);	
Asset purchases		
Covered Bond Program I (May 2009 to June 2010) and II (Nov. 2011 to October 2012)	Commitment to volumes CBPP I = EUR 60bn CBPP II = EUR 40bn (Hold to maturity)	Lower cost of funding in the covered bond market, a long-term source of market funding
Securities Market Programme (May 2010, suspended by January 2011; restored in July 2011)	Sterilized, on-off purchases, no commitment to volume, no disclosure of originator of instrument.	Restore liquidity in sovereign bond markets important for bank funding (collateral).

2011)			
Outright Monetary Transactions (August 2012)	Sterilized; short-term instruments; no ex-ante limits; strict conditionality ESFS/ESM		Signalling effect, accompanied by improved funding conditions, improved periphery sovereign yields
Exit strategies	Exit narrative		Interactions with market funding
LTRO phasing-out announced (Dec. 2009)	Stabilized market conditions		Return to market funding
Tightening of collateral requirements (January 2011)	Haircut differentiated according to credit ratings of collateral to protect ECB from credit risk		Increased costs of using lower rated sovereign debt reduces repo-driven demand
Increase interest rate (March 2011)	Return to interest rate as policy instrument to tackle inflation		Interest rate risk

Note: LTRO = long-term refinancing operations

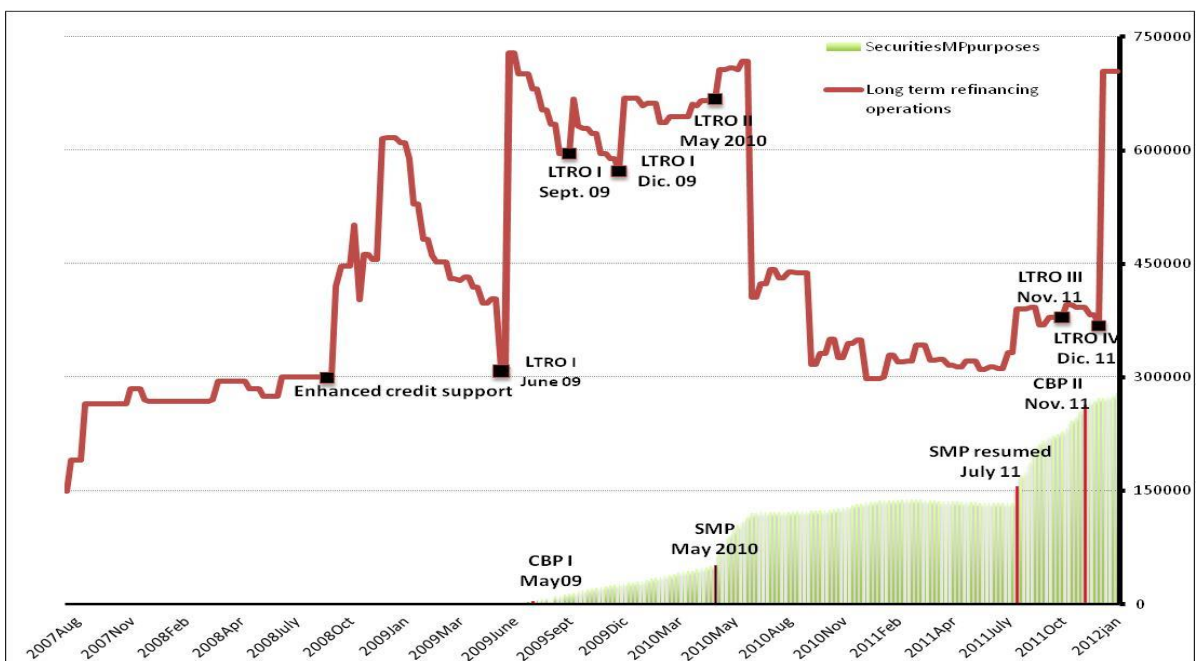
Thus, the ECB first introduced the Enhanced Credit Support strategy in October 2008. With this, it extended the term of its repo loans to six months, expanded the range of counterparties that could tap its liquidity facilities, and relaxed the collateral requirements. As the crisis intensified, it announced three one-year LTROs in May 2009. Banks tapped the LTRO auctions heavily in June 2009 (around EUR 350bn), to then progressively reduce the demand for reserves in the September and December auctions (see Figure 9). LTROs further contributed to the stabilization of collateral markets, particularly sovereign bond markets, in two distinctive ways. First, relaxed collateral requirements would allow banks to use sovereign collateral in private repo markets, although the impact of collateral reallocations was constrained by the relatively small share of sovereign collateral used for accessing ECB funding pre-crisis (around 10%, see Cheun et al, 2009). Second, banks used ECB liquidity to purchase government bonds because a) these offered attractive yields in a context of scarce profit opportunities (Lapavitsas et al, 2010) and b) to

strengthen collateral portfolios that would allow them to replace ECB funding with market funding once the ECB initiated its exit measures.

These indirect effects of the LTRO programs on government bond markets helped the ECB defend its decision to not buy government bonds, as its peers in other high-income countries were doing under the QE programs adopted in early in 2009 (Dale et al, 2010). For the ECB, government bond purchases would take it into the problematic territory of monetary financing, explicitly prohibited in its mandate. This does not imply that the ECB did not purchase outright any assets, but it chose to intervene directly in markets that would create less political contestation. It thus announced the Covered Bond Purchase Program, aimed at improving banks' access to long-term secured market funding (Beirne et al, 2011). Since German and Spanish banks dominated the covered bond market (around a quarter of outstanding volumes), the CBPP program met with little political resistance.

Encouraged by the apparent stabilization of financial markets and concerned about inadvertently feeding a return to excessive risk-taking behaviour, the ECB announced the phasing-out of its extraordinary liquidity injections in December 2009 (ECB, 2010; Fahr et al., 2011). However, its attempts to exit were thwarted by the Greek sovereign debt crisis and the contagion to other countries in the periphery of the Eurozone.

Figure 9 Bank-based and market based crisis measures, ECB, 2008-2011

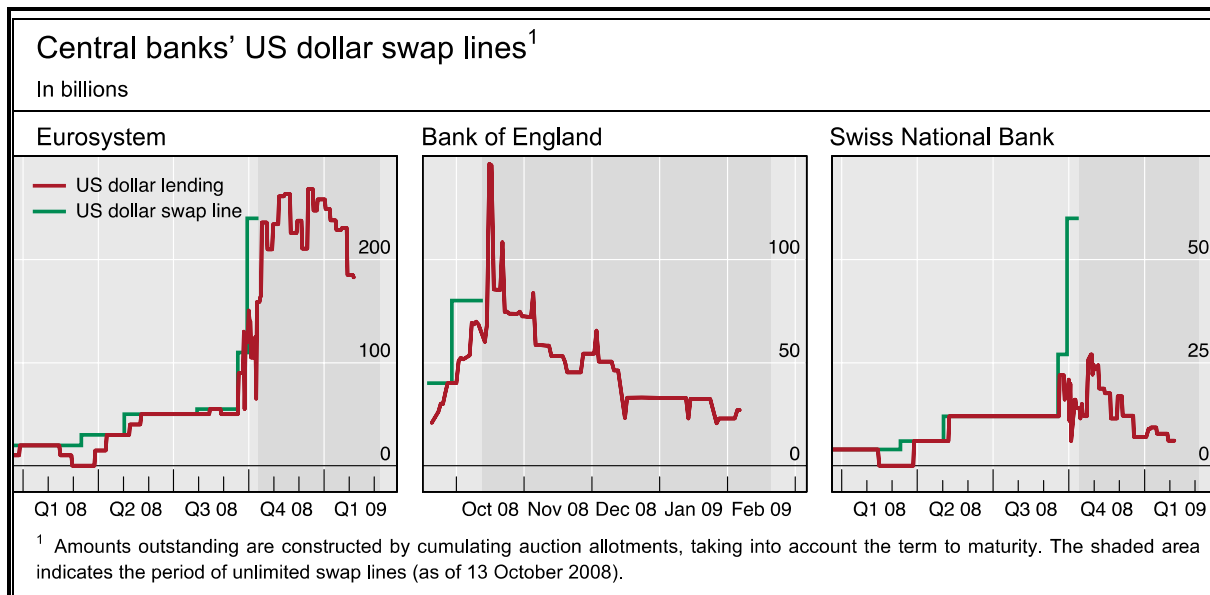


4.2 Central bank swap networks: the Fed and the Swiss Central Bank

The literature studying the informal cooperation between central banks during the global financial crisis typically focuses on the US Federal Reserve. The background to exploring the role of the Fed is the rapidly growing cross-border banking flows after 2000. As McGuire and von Peter (2009) argue, international banks, particularly those headquartered in Europe, became increasingly reliant on dollar funding markets in order to finance their positions in US asset markets (including securitization markets). Estimates put the net funding gap as high as USD 1.3 trillion, met in short-term interbank markets, including the repo market (USD 400bn), borrowing from central banks (USD 380) and from fx swaps (USD 800 bn). Starting with the disruptions in US financial markets in 2007, banks found it increasingly difficult to roll over dollar funding.

Before Lehman, European banks that were also primary dealers in the US could address this funding stress by tapping, against collateral, the liquidity lines of the US Fed. However, not all European banks with dollar funding shortages were primary dealers, and therefore did not have access to the US Fed (for instance small German banks). To mitigate these shortages that had the potential to sharpen stress in US financial markets, if banks were forced to resort to fire sales, the Fed introduced currency swaps that would allow the central banks where those banks were headquartered to provide US dollar funding (Kohn 2009). Before Lehman's collapse, the Fed set a ceiling to its swaps with European central banks (see Figure 10). After October 2008, the ceilings were lifted, allowing the Fed to supply unlimited USD liquidity to central banks. The swap lines expired at the end of January 2010 (see Allen 2013).

Figure 10 US FED swap lines with ECB, Bank of England and SNB, USD billion



Source: McGuire and von Peter, 2009

The Swiss central bank was among the first to change its liquidity policies in response to the increasingly global nature of the Swiss franc. In 1999, it extended the range of counterparties with direct access to its liquidity facilities to include non-resident banks and securities broker-dealers that can settle in Swiss central bank money. By 2010, 62 of the 170 banks participated in CHF operations on a remote basis. Of these, 24 were headquartered in Austria, 16 in Germany and 6 in UK. At the height of the crisis, in 2009, foreign financial institutions accounted for around 80% of liquidity borrowed from the central bank, illustrating the extent of systemic Franc shortages (see Auer and Kraenzlin 2011).

SNB's liquidity operations are distinctive from other systemic central banks in two respects: the open-access approach to counterparties and the collateral framework. Neither is restricted by national boundaries. The SNB accepts foreign-issued collateral, from non-resident counterparties, in exchange for franc liquidity. The range of assets accepted is extensive, and denominated in EUR, USD, GBP and Swedish Krona. The SNB explains its open access/foreign collateral policy as a consequence of the small scale of the domestic capital markets. Under these constraints, a CHF only collateral policy would limit the scale and scope of repo transactions, and distort dynamics on the domestic

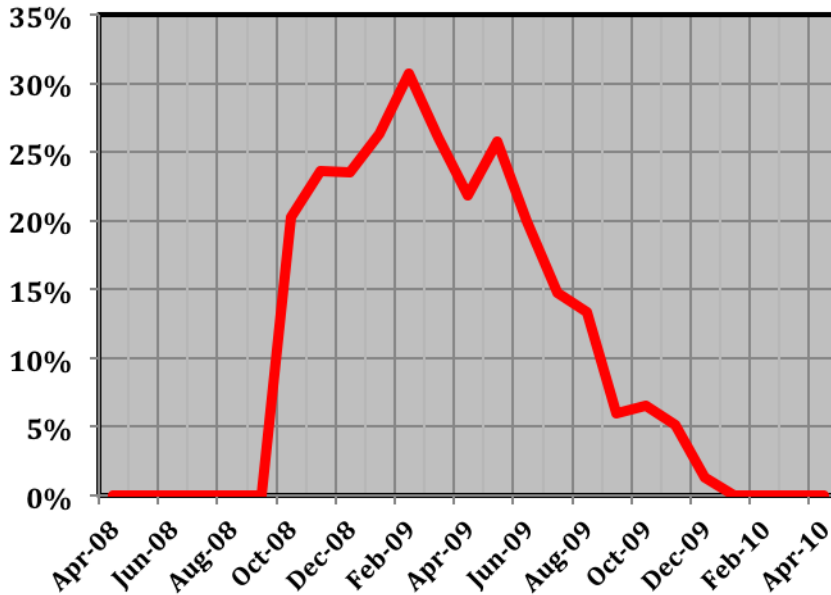
repo market, where trading would no longer represent domestic monetary conditions, but the international role of the franc.

SNB implements monetary policy on the Eurex repo, the Swiss franc repo platform. The reason for doing so reflects the difficulties – outlined above - faced by central banks with financial systems well integrated in global financial architectures. The SNB deliberately wanted to circumvent domestic banks in the cross-border provision of liquidity 'seeking to reduce dependence on the few large Swiss financial institutions and to improve the general liquidity distribution' (Kraenzlin and Nellen 2012). The SNB wanted to delink domestic monetary dynamics from the international role of the franc in order to preserve (some) monetary policy autonomy. However, throughout the crisis, the difficulties in doing so became apparent.

As funding tensions increased rapidly after Lehman's collapse, banks in CEE countries found it difficult to roll-over short-term CHF funding when banks with access to the Swiss unsecured and repo markets became reluctant to lend. Without a direct account at the SNB, even banks with high quality collateral could not access funding. Even though the SNB had an open access policy, the formal process of becoming counterparty took time that banks did not have in the crisis. For the SNB, a disorderly unwind of CHF assets threatened to become a Swiss Franc crisis. To mitigate that threat, the SNB opened up EURO swap lines with the ECB, and with two Eastern European central banks, the Hungarian MNB and the Polish NBP.

As Figure 11 shows, central banks tapped the swap facility between October 2008 and December 2009. In the last months of 2008, lending via the swap facility rose to account for over 30% of the SNB's balance sheet, to decline gradually throughout 2009 as tensions subsided, allowing private banks to return to private money markets.

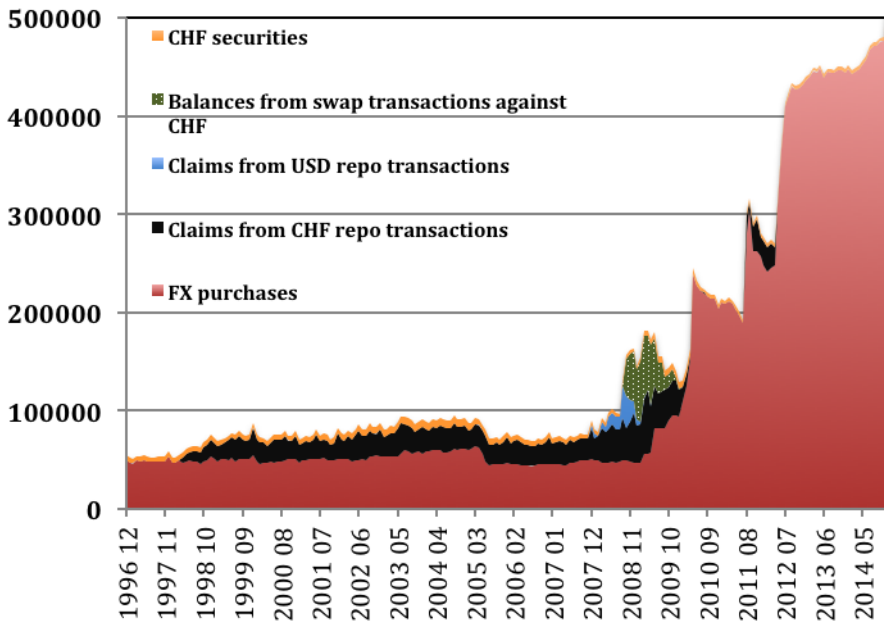
Figure 11 SNB swap facilities, as % of overall balance sheet



Source: central bank website

Liquidity conditions in CHF money markets, and the SNB's strategy for creating CHF liquidity changed radically after mid 2009. The context of this change is important to understand. Following the collapse of Lehman Brothers, central banks in high-income countries first lowered policy rates to zero and then introduced large programs of quantitative easing. This confronted the SNB with the challenges typically faced by central banks in emerging countries: large capital inflows that put pressure on the domestic currency, threatening export competitiveness and exerting deflationary pressures. In response, the SNB started to intervene in currency markets, capping the appreciation of the franc at 1.20 per euro. With this, the SNB moved to supplying franc liquidity almost exclusively through exchange rate interventions, flooding the banking system with excess liquidity.

Figure 12 Asset composition, Swiss National Bank (CHF million)



Source: central bank website

4.3 The ECB and the political economy of cooperation with CEE central banks

The ECB cannot be a small god for everyone and for everything... no mandate to be a regional United Nations agency

Yves Mersch, central bank of Luxemburg, January 2009⁵

This section explores the ECB's crisis interventions in relationship to CEE countries, asking how it responded to the pressures generated by the status of the euro as a regional currency. It contrasts these with the actions of its neighbour, the Swiss central bank, and with its strategies towards the fx needs of banks based in the Euro area. In a nutshell, the ECB proved more willing to coordinate with central banks in high-income countries where Euroarea banks had funding exposures (the US in particular), and Northern Europe where CEE foreign-owned banks were headquartered (Sweden, Denmark), than with CEE

⁵ <http://www.ft.com/cms/s/0/41e5ca2e-e8ef-11dd-a4d0-0000779fd2ac.html#axzz3cN1s0yrJ>

central banks. It took the ECB twelve long months after the collapse of Lehman Brothers to introduce swap lines with the central banks of Poland and Hungary, swap lines that it had granted to Sweden and Denmark in 2008, and enjoyed from SNB and the US Fed.

In focusing on how the ECB's extraordinary liquidity provisions impacted CEE central banks' access to euro liquidity, this section argues that the second-order status that the ECB attached to CEE central banks has to be understood as a consequence of the complex political economy of cross-border crisis management in Europe, and the participation of the ECB in the Troika as an official negotiating partner. The ECB's experience further offers broader lessons about the constraints and dynamics of international monetary hierarchies ordered, and shaped, by the global footprint of international banks. Indeed, it is important to stress that the need for (in)formal cooperation between central banks is simply a reflection of the increasingly global nature of banking, and the footprint that global banks leave on national money hierarchies. The ECB (2014) recognized this by arguing that although swap agreements between central banks had been part of the international cooperation toolkit for decades, the post-2007 approach was substantively different. Thus, central banks typically lent to each other in order to support interventions in currency markets (defending, for instance, an exchange rate peg or preventing the rapid depreciation of the domestic currency, and the attending inflationary pressures). In contrast, the ECB's swaps after 2007 served the purpose of providing foreign currency liquidity to domestic counterparties (that is, commercial banks with an account at the Eurosystem).

Ulrich Bindseil (2014), then head of Liquidity Management at the ECB, described the problems that banks experience in refunding their fx exposures as a pressure on the central bank to 'provide currency bridges to the market', extending their liquidity creation function through two distinctive strategies: (i) lending domestic liquidity against fx collateral, possibly to banks domiciled in foreign jurisdictions and (ii) lending fx liquidity against domestic collateral to domestic banks. The first scenario arises when central banks at the top of international money hierarchies - such as the Swiss central bank - are faced with increased demand for their currency arising from the international status (and the global relevance as funding currency) of that currency. The second scenario is relevant for central banks whose financial system headquarters global banks (ECB) or whose financial system has been shaped by dependent financialization (CEE countries). These

find that the cross-border, cross-currency activity of their banking sector – be it through direct borrowing in international money markets, or borrowing domestically from non-residents in fx swap markets – becomes a source of systemic risk when fx funding is no longer available. The room for manoeuvre in this second case is restricted by the fx reserves of the central bank, known to disappear quickly in the crisis, and by the willingness of the central banks issuing the needed currency to open up swap lines. Bindseil (2014: 287) recognizes that the later is 'more efficient and has higher credibility as it is potentially unlimited'.

Indeed, a timeline of the ECB's foreign currency operations suggests that the ECB's preferred method for supporting the structural deficit of USD liquidity for the European banks was to lend USD against EUR eligible collateral, supported by swaps with the US Federal Reserve. In December 2007, the ECB introduced US dollar repos with domestic counterparties, repos that remained in place until April 2014 (see Figure 13). The maturity and costs of these repo operations were altered throughout the crisis.

Figure 13 The ECB's unconventional fx operations

Date	Description	Maximum amount (in billions)
13 October 2008	Federal Reserve enlarges swap line with ECB	Unlimited
15 October 2008	ECB establishes swap agreement with Swiss National Bank	CHF 25 per tender
15 October 2008	ECB discontinues overnight US dollar repo operations	
15 October 2008	ECB begins conducting 7-day US dollar repo operations with fixed rate	
16 October 2008	ECB establishes agreement to provide euro to Magyar Nemzeti Bank	EUR 5
20 October 2008	ECB begins conducting 7-day and 84-day Swiss franc foreign exchange swap operations with fixed rate	
21 October 2008	ECB begins conducting 7-day and 28-day US dollar foreign exchange swap operations with fixed rate	
26 October 2008	ECB establishes swap agreement with Danmarks Nationalbank	EUR 12
11 November 2008	ECB establishes agreement to provide euro to Latvijas Banka	EUR 1
21 November 2008	ECB establishes agreement to provide euro to Narodowy Bank Polski	EUR 10
28 January 2009	ECB discontinues 7-day and 84-day Swiss franc foreign exchange swap operations	
28 July 2009	ECB discontinues 28-day US dollar repo operations	
6 October 2009	ECB discontinues 84-day US dollar repo operations	
1 February 2010	Swap agreement with Federal Reserve expires	
9 May 2010	ECB re-establishes swap line with Federal Reserve	Unlimited
11 May 2010	ECB begins conducting 7-day US dollar repo operations with fixed rate	
18 May 2010	ECB conducts an 84-day US dollar repo operation with fixed rate	
17 December 2010	ECB establishes swap agreement with Bank of England, subsequently renewed three times until 30 September 2014	GBP 10
12 October 2011	ECB begins conducting 84-day US dollar repo operations with fixed rate	
30 November 2011	Pricing of swap reduced from USD OIS+100 basis points to USD OIS+50 basis points, bilateral network of swaps established with Bank of Canada, Bank of England, Bank of Japan, Federal Reserve and Swiss National Bank	Unlimited
10 October 2013	ECB establishes bilateral swap agreement with People's Bank of China	EUR 45 CNY 350
31 October 2013	Temporary swap agreements with Bank of Canada, Bank of England, Bank of Japan, Federal Reserve and Swiss National Bank converted to standing bilateral swap lines	Unlimited
23 April 2014	ECB discontinues 84-day US dollar repo operations	

Source: ECB(2014)

Yet Figure 13 also suggests that Bindseil neglects to include a third mechanism that the ECB used to provide Euroarea banks with foreign currency. On October 20, 2008, it began conducting CHF swap operations with domestic counterparties, extended to USD swaps next day. Thus, Euroarea commercial banks could obtain both USD and CHF *without* posting collateral, but rather using the EUR liquidity they were borrowing from ECB in extraordinary repo operations. Neither operation had formal upper limits in place. The ECB(2013) stressed two drawback of swaps compared to repo operations. First, swaps would drain euro liquidity, since banks have to find central bank reserves in order to exchange these for foreign liquidity. Second, the ECB had to resort to complex pricing in order to discourage arbitrage. However, the ECB described collateral constraints as the most important purpose of distributing foreign liquidity through swaps. Banks without

eligible collateral to access USD repos could instead rely on fx swaps. Thus, the next sections will show, the ECB was prepared to provide emergency liquidity on more generous terms to its commercial banks than to the CEE central banks, who faced stronger collateral constraints at the height of market tensions after the fall of Lehman.

4.3.1 Managing the Troika lines

In crisis times, the mechanics of liquidity support to the domestic banking sector are essential. These can have effects beyond national borders. Consider the ECB's view on the cross-border spillovers of its unconventional monetary policies. According to this view, the ECB (2014) was supplying euro liquidity indirectly to CEE economies via the EMU banks that had sizeable operations in those countries. However, parent banks proved rather reluctant to do the ECB's job. As European banks active in Eastern Europe had come under serious pressure in dollar funding markets, by the end of 2008 they started threatening to reduce drastically funding to CEE subsidiaries (see Pistor, 2011). In some cases, reported by the Financial Times, CEE central banks were complaining that the European banks were using the ECB's extraordinary liquidity to speculate in CEE currency markets (see Gabor 2014). Relying on private financial institutions to meet the complex challenges of cross-border currency provision was a bet with complex stakes. Furthermore, several countries – such as Hungary - had locally-owned banks with cross-border or domestic euro exposures that could not be rolled over in private currency markets.

It took little time after the collapse of Lehmann for the ECB to accept that relying on Western Banks to channel liquidity across borders would be of little assistance to CEE countries since it was the banks themselves that were conduits for the crisis. Indeed, the pre-crisis model of cross-border banking was at the root of financial fragilities in CEE countries. Out of the various countries in the region that had come under severe market pressure after Lehman, the ECB decided to assist two: in October 2008, the ECB introduced a EUR 5 bn. repo line with the National Bank of Hungary (who received an official bailout from the IMF and the EU that same month), and in November 2008, a €10 billion repo line with the National Bank of Poland.

In doing so, the ECB took an unprecedented step in formalizing a relationship with the countries using its currency. This was unprecedented in the sense that the ECB was created as a fair-weather central bank, without contingency plans for a financial crisis in place. Furthermore, the complex politics of financial regulation in Eurozone in practice meant that countries that reluctantly abandoned their monetary sovereignty refused to surrender supervision of their banking systems, often because member States viewed support of national banking champions as 'industrial' policy. Until the Banking Union, national supervisors in the Member States had carefully guarded their sovereignty in regulating – or, better put, encouraging – the cross-border activities of their banks. While European - and global – banking were expanding, the expansion aligned well the interests of home and host regulators, including in CEE countries. But crisis put home and host regulators at odds, since decisions made without clear mechanisms for coordination may create negative spillovers for the other party (see Kudrna and Gabor 2013). Without a mandate, the ECB found itself in the position of potentially mediating between home and host regulators, and influencing directly those negotiations with its decisions to extend (ad-hoc) liquidity support to CEE central banks through swap networks.

Against this context, deciding to go beyond the limits of its narrow mandate was an important, highly unconventional, step for the ECB. But this large step for ECB was a rather small one for the CEE countries: the ECB decided that it would treat CEE central banks as Eurozone commercial banks, that can only obtain euro liquidity against ECB eligible euro collateral. Thus, CEE central banks would only be able to borrow from the ECB if they had euro-denominated tradable assets. Their own governments' debt was not eligible. Furthermore, by being treated as private banks, the risk management framework of the ECB would be applied to these loans between central banks: the ECB would impose haircuts on lower-rated euro assets, mark the collateral portfolio to market and make margin calls. Yet given the risk parameters guiding the central banks' portfolio decisions, it is unlikely that CEE central banks had their foreign reserves in anything but safe assets – government bonds of their own and other (high-income) countries. In practice, the ECB repo loans meant replacing liquid tradable debt issued by Eurozone governments with EUR liquidity, but would provide no net liquidity relief to central banks in Eastern Europe countries.

At first sight, the ECB's position is consistent with its mandate to protect its balance sheet from credit risk. In refusing to accept the marketable debt issued in CEE countries, the ECB simply followed the rules of its risk management framework. Yet this explanation is unconvincing for two reasons. First, the ECB introduced a series of unconventional measures that had not been scripted into its legal mandate. It expanded the list of acceptable collateral to include private assets that were illiquid, and for most purposes, junk. It introduced fx liquidity lines in December 2007, offering USD funding to Eurosystem counterparties (Bindseil 2014). Its covered bond program, and then the Securities Market Program, could well be interpreted as a subsidy to private and public issuers, as some commentators argued. It also provided foreign liquidity to its own banks through swap agreements. Second, the ECB did introduce several swap lines, with the US Fed, with SNB and with Nordic central banks. *Therefore, the ECB was prepared to provide currency bridges to central banks that it perceived to be its peers.*

Table 2 Central bank cross-border liquidity support, 2008-2009

	<i>Type of support to CEE central banks</i>	<i>Collateral requirements</i>
ECB	Capped repurchase agreements (lending against collateral)	ECB eligible (no CEE sovereign debt).
	fx swaps for Hungary and Poland	none
SNB	FX swaps against euro OMO via open access policy: non-resident, against non CHF collateral	
Danmarks National Bank; Sveriges Riskbank	FX swaps against local currency	

Contrast the ECB's strategy with other central banks whose currency was used for funding by CEE banks (see Table 2). The Swiss National Bank offered FX swaps of Swiss Francs for Euro from the offset. On 15 October 2008, the SNB and the ECB jointly announced that they would conduct EUR/CHF swaps providing Swiss francs against euro. The Narodowy



Bank Polski and Magyar Nemzeti Bank joined the concerted auction starting 17 November 2008 and 2 February 2009 respectively. In doing so, the SNB provided support on more generous terms, yet it did not solve the key problem of the CEE central banks, which needed both EUR and CHF liquidity.

Hungary's failed government bond auction in early October 2008 signalled that the post-Lehman contagion had become a real threat for CEE countries (see Bluestein 2015). Non-resident investors were liquidating their bond holdings rapidly and withdrawing fx swap funding from the banking system. This sharpened foreign currency shortages particularly for locally-owned banks, who had no parent to turn to, and were instead relying on the central bank support. Hungary turned to IMF for balance of payments support. However, the process of obtaining IMF loans for European countries differs in that the mission teams negotiating the rescue include, besides IMF staff, also staff from the European Commission and the ECB – the now infamous Troika. Indeed, Lutz and Kranke (2011) show that the ECB played an important role in the decision of the Latvian authorities to maintain a peg that the IMF opposed, worried that it would sharpen deflationary conditions. Lutz and Kranke argue that the ECB – together with the Commission – pushed for a far more orthodox, austerity-based, adjustment program than the IMF would have preferred (also Bluestein 2015), believing that (pro-cyclical) tight monetary and fiscal policies were necessary to preserve the integrity of the euro project, at stake in the crisis. The same austerity was at play in Hungary, where the ECB agreed to extend EUR 5 bn repo loan to the central bank in October 2008 and nothing more, while negotiating the terms of the rescue package in the Troika.

The ECB's position towards CEE countries was thus riddled with conflicts of interest. On the one hand, the systemic role of the euro in CEE countries, many on route to adopting the euro, would have required the ECB to provide temporary support for central banks when currency markets - dominated by financial institutions located in the Euro area – stopped working. On the other hand, its participation in deciding the bailout conditions, an overtly political role, constrained the extent to which it was willing to extend unconditional support, via swaps, to CEE central banks. While the ECB had no mandate for any of the two activities – official Troika negotiator or international lender of last resort via swaps - it choose to interpret the extensions of its mandate in such a way that it reinforced its

institutional position in the bailout mechanisms, but at the expense of policy autonomy in CEE countries.

One paradoxical outcome of this conflict of interest was that the ECB ended up providing Euros to CEE countries via third-party central banks outside Euro area. For instance, in December 2008, while Latvia was negotiating an agreement with the Troika – the IMF, the European Commission and the ECB – the Danish and Swedish central banks decided to open a swap line in which they would lend up to EUR 500 million against Latvian lats⁶, euros that they had obtained from a temporary swap with the ECB. The Nordic central banks decided to get involved because of the systemic importance of the Baltic financial systems, dominated by Nordic banks. But Latvia could – and likely did – use the swap proceeds to support the domestic banks with cross-border exposures in Eurozone interbank markets. Paradoxically, the Nordic central banks functioned as intermediaries between ECB and CEE central banks⁷. The swaps, unlike the ECB's repo loans, increased the level of foreign reserves of the central banks.

Throughout 2009, the dysfunctional political infrastructure supporting the international role of the Euro, and its implications for CEE countries, became more visible. The IMF/EU support to Hungary and Latvia in the last months of 2008 did little to stabilize financial markets, or cross-border banking flows. Rather, January and February 2009 saw crisis spreading to Romania, who also demanded balance of payment support in March 2009. By then, international financial institutions in the area had become concerned that global financial institutions were treating the entire CEE region as a subprime region. Non-resident investors were withdrawing rapidly, while foreign banks threatened to curtail support to subsidiaries. Despite such evidence that the strategy to use parent banks to channel Euro liquidity into the CEE region was failing, the ECB refused to open up swap lines.

In the early months of 2009, CEE central banks, including those of countries that would weather the crisis without IMF/EU support (Poland, Czech Republic) became more vocal in their demands for the ECB to provide support, either through currency swaps or by accepting CEE currency sovereign bonds from parent banks as collateral⁸. CEE central

⁶ Similarly, the Swedish central bank initiated a swap agreement with the Estonian central bank, offering up to SEK10 billion (about €0.9 billion) in February 2009.

⁷ <http://www.riksbank.se/Pagefolders/38192/nr71e.pdf>

⁸ <http://www.emergingmarkets.org/Article/2204902/Pressure-mounts-on-ECB-for-currency-action.html>

bankers questioned the ECB's reluctance to accept CEE currency on their balance sheet, pointing to the experience of the US Fed (Darvas and Pissany-Ferry 2008). The Fed's swap lines with emerging countries (Brazil, Korea, Mexico and Singapore), introduced in October 2008, had contributed to improved market confidence without those central banks having to actually draw on the swap (Aizenmann 2010, Shambaugh, Obstfeld and Taylor, 2010). Had the ECB applied the US criteria – to help countries with significant trade and financial linkages (read US banks exposure) – it would have granted CEE countries access to ad-hoc arrangements. Its interventions, it is plausible to argue, would have worked similar to the US Fed's, through the signalling channel, providing a much-needed boost to confidence in the CEE region, with limited impact on the ECB balance sheet (and credit risk). Yet the ECB refused to provide direct Euro liquidity to CEE central banks until, some speculate, late 2009.

While the ECB (2014)'s work on unconventional fx measures makes no mention, several observers have argued that the ECB caved in and introduced actionable swap lines with Hungary and Poland in October 2009 (see Vallee 2010). This was the result of an internal struggle that pitted Germany's Bundesbank against Eurosystem members whose banking sector had significant CEE exposures, the central bank of Austria (Oesterreichische Nationalbank) and Banque de France. Predictably with the hindsight of the European sovereign debt crisis, Bundesbank opposed measures that it considered to be outside the ECB's mandate, potentially eroding the central bank's credibility and the commitment of CEE Member States to design and implement the necessary structural reforms. In this, the Bundesbank had the support of other Eurosystem members who had no direct interest in CEE banking systems. In January 2009, Yves Mersch, at the time governor of the central bank of Luxembourg, rejected calls for ECB support by arguing that the ECB was neither the go-to God, nor did it have a mandate for a 'regional United Nations'. However, the analysis above suggests, the ECB had direct stakes in the crisis management regimes adopted by CEE countries, and worked in the Troika to influence these.

4.3.2 The Vienna Initiative(s)

Without the ECB standing ready to help CEE central banks ride the wave of funding shortages, Member States were forced to create an ad-hoc coordination mechanism that



came to be known as the Vienna Initiative, or formally, the European Bank Coordination Initiative. The Vienna Initiative brought together parent banks and regulatory authorities from both home and host markets in an effort to persuade parent banks to maintain commitment to CEE subsidiaries. The Vienna talks began under the umbrella of the Troika negotiations with Romania, and were later extended to several countries in the region. By the end of 2009, 15 parent banks had agreed to rollover and capitalization commitments in five countries – Bosnia, Hungary, Romania, Latvia, and Serbia, all countries under IMF (and some EU) programs.

The scholarship on the Vienna Initiative takes two distinctive positions. A positive appraisal describes the VI as a successful solution to a collective action problem (Pistor 2011, Epstein 2013). In this account, European banks and their regulators agreed on a set of measures that would ensure parent banks' continued support of their subsidiaries in the region – in several cases expressed in quantitative recapitalization targets. Vienna participants shared a common diagnostic of vulnerabilities created by the transnational banking model, and banks' cross-border activities. Affiliates of European banks had relied too much on internal capital markets and preferred to lend in foreign currency, transferring currency risk to borrowers (EBCI 2011; de Haas et al 2012). When Lehman fell, parent European banks scrambled for liquidity across affiliates (de Haas et al 2012). The rapid growth in cross-border bank liabilities before 2008, as banks centralized funding and liquidity decisions in the parent bank, created new channels of cross-border contagion. Parent banks recognized the importance transiting to a local banking model, whereas host regulators committed to preserve a macroeconomic policy environment that would stimulate the accumulation of domestic savings, and thus create the domestic deposit base that banks needed to implement a business model reliant on domestic resources. Yet through a financialized-hierarchy lens, this celebratory story of a transition to a local, relationship-based banking model does not hold. Commercial banks, domestic and foreign owned, have no constraints from the deposit base, rather the opposite. Banks endogenise the creation of both private and public monies, the latter by transacting with the central bank on currency markets. If banks choose to fund abroad, they do so because of profitability considerations.

A more critical reading of the Vienna Initiatives stresses the political economy of the negotiations between parent banks, home and host regulators. In this account, the



business model of transnational banks provides the starting point. Thus, host central banks introduced some form of capital controls after October 2008, to prevent affiliates from transferring profits to parent banks (in Poland, Croatia and Turkey, see Cerutti et al 2010), ring-fence assets (Pistor 2011) or to constrain shadow complementarities by refusing to lend crisis liquidity to those resident banks that gave it onto non-resident speculators (in Latvia or Romania, see Buiter and Sibert 2008, Gabor 2015). Thus, foreign banks saw their market-based activities threatened by increasingly assertive host regulators, who began questioning the narrative that whatever banks did in CEE countries, it would result in improved efficiencies and better allocation of capital and resources. Instead, host regulators appeared intent to force structural reform of cross-border banking by constraining banks' activities in fixed income and currency markets. The ECB's support via swaps would have strengthened this newfound drive to create policy autonomy, and to regain control over domestic currency hierarchies. Without the ECB's support, transnational banks used the Troika/Vienna Initiative space to pressure host regulators into re-thinking this shift. Indeed, one of the crucial points stressed by the VI documents was the importance of preserving banks' ability to move liquidity and capital freely through internal capital markets. Furthermore, banks stressed that their continued involvement in CEE countries also relied on the existence of profitable placements. For instance, the letter issued by banks that outlined their commitment to Hungary read as follows:

We are aware that it is in our collective interest and in the interest of Hungary for all of us to reconfirm, in a coordinated way, our commitment to maintain our overall exposure to Hungary. Mechanisms to specify this effort will be developed in due course, taking into account availability of adequate lending opportunities or alternative investment instruments in Hungary⁹ (European Banking Group 2009).

In other words, transnational banks demanded that host authorities provide non-discriminatory liquidity support that would allow them to support market-based activities, and preserve the mechanisms of the dependent money hierarchy.

To sum up, transnational banks successfully averted the threat of greater regulatory interference with their business models in the aftermath of Lehman's collapse. The Vienna

⁹ Broadly identical statements were released for Romania, Latvia, Lithuania. Author's emphasis.

Initiative offered banks a useful platform to intervene in regulatory debates about the changes needed to ensure more sustainable business models. Indeed, a second round of the Vienna discussions, taking place in early 2012, saw banks successfully arguing that the implementation of Basel III would lead to a credit crunch in Eastern European economies unless regulators allow them to pool capital and liquidity freely across their subsidiaries (EBCI 2012b).

5. Conclusion

The ECB did little to support CEE central banks, and their financial systems, at critical junctures in the crisis. In fact, at critical junctures, the ECB provided more generous funding terms for private banks than for sovereign central banks.

The question then becomes why should the ECB have done otherwise? Responsibility for the mis-management of money hierarchies should be placed squarely at the feet of CEE central banks, whose choice of exchange rate regime and benign neglect of foreign currency lending created the type of vulnerabilities that the ECB swap could – but did not have to – address. This is indeed a valid argument but needs to be nuanced by the complex interactions, and potential conflicts, between home and host regulators. First, it is clear that central banks in Eastern Europe could have done more to regulate their foreign-owned banks. Why did they choose a benign approach? The intuitive answer is to point to a collective failure of central banks to worry about financial stability, second order to price stability. In that, CEE central banks were not that different from peers elsewhere. Furthermore, behind this benign neglect, this contribution argued, lays a rather more political imperative linked to convergence: in Eastern Europe, central banks often walked a fine line between encouraging banks to intermediate capital inflows in order to appreciate domestic currencies that would in turn lower inflation rates and intervening to excessive appreciation of the domestic currency that would hurt export performance. Second, the contribution compares the approach of the ECB with other central banks whose commercial banks were active in Eastern Europe. That comparison calls into question the ECB's reluctance to recognize its systemic role, a reluctance that the paper attributes to the poor design of the crisis management regime (and the institutional design of the Euro) in Europe that creates two conflicting demands on the ECB: as central bank and powerful actor in the design of conditionality for countries experiences financial distress.

Indeed, the ECB's reluctance to act was not simply a constraint of its mandate. If anything, the collapse of Lehman has seen the ECB pushing the boundaries of what it was originally tasked to do – to deliver price stability – both through its unconventional monetary policies and its unconventional foreign currency liquidity provision. This also went beyond a simple question of alternative mechanisms, as the ECB (2014) argued. According to this view, CEE countries did not need direct central bank swaps because the ECB was already providing cross-border loans with the Euro liquidity necessary to support their subsidiaries' fx funding shortages. Rather, the ECB's relationship to CEE central banks illustrates the broader political economy of overlapping money hierarchies and dependent financialization.

Thus, the report conceptualized the relationship between issuing central bank (ECB) and home (CEE) central banks by bringing together two related theoretical lenses: money hierarchies and dependent financialization. The first theorizes the relationships under which public and private money are created, the constraints on the creation of private money, and their dynamics in crisis. The second highlights the cross-border connections that drive processes of financialization in a financial system dominated by foreign-owned banks. Thus, central banks in dependent, financialized money hierarchies characterizing the CEE countries find that the constraints they can place on over the process of money creation – and hence, their tools to conduct monetary policy – become greatly eroded by the cross-border, cross-currency, cross-market activities of their banking sector. Commercial banks can effectively endogenize both the price and quantity of reserves (means of settlement) created by the home central bank, which becomes another source of profit-generation for the private financial sector through its currency and money market activity (in the form of sterilizations).

Without means to control the pace of expansion in credit and money, the home central bank becomes vulnerable to the decisions of the central banks whose currencies fund the domestic banking system. How these vulnerabilities play out becomes a question of political economy. For central banks in large, internationalized banking systems, the answer was cooperation in the form of currency swaps after 2008. For CEE central banks, the ECB refused close cooperation, instead preferring to engage in Troika negotiations that provided currency support with significant structural conditionality and austerity attached. This further forced CEE banks to temper their early post-crisis drive to curtail the

vulnerabilities of cross-border banking (including through capital controls) and instead make commitments, via the Vienna Initiative framework, to allow and support the mechanisms of financialized dependency.

Will this be an isolated episode in the complex, fraught politics of the EU and the ECB? At first sight, the answer appears to be yes. The Banking Union agenda promises to curtail the vulnerabilities of cross-border banking, and create mechanisms for managing the potential spillovers. It also invites CEE countries to opt in the plans, considering the important role that EMU-owned banks play in their banking systems. Yet on closer look, Banking Union opt-ins remain fraught with uncertainty. Many CEE countries are less enthusiastic about Euro adoption, and about opting into the Banking Union plans. Their reluctance stems from inadequate institutional design (decisions taken by ECB governing council where opt-in countries do not have access), and from inadequate liquidity backstops (the ECB's emergency liquidity assistance on narrow terms). Opt-in countries would have to handle supervisory failures by the ECB on their own.

Without a careful re-think of the banks' systemic footprint in currency and capital markets – and the possibility to manage it without capital controls – the Banking Union initiative is unlikely to address the challenges that financial globalization poses for the CEE region.

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