This is the pre-print version of a chapter in the 'International Handbook of Financialization' (Routledge), edited by Philip Mader, Daniel Mertens, and Natascha van der Zwan.

Central banking, shadow banking, and infrastructural power

Benjamin Braun ^a and Daniela Gabor ^b

^a *Max Planck Institute for the Study of Societies, Cologne*

^b *University of the West of England, Bristol*

Abstract

Public monetary governance and private market practices are closely entangled. Monetary policy depends on private financial infrastructures. At the same time, central banks exert considerable influence on market structures and practices. This paper presents the theoretical rationale for analyzing state-finance interactions through the lens of infrastructural entanglement and infrastructural power. We then apply this perspective to two crucial cases, showing how and why the Federal Reserve and the European Central Bank advocated and actively promoted, for monetary policy purposes, the development of shadow banking and shadow money. These cases serve to illustrate our argument that financialization could not have unfolded the way it has without increased infrastructural entanglement of central banking and shadow banking.

Acknowledgements: We would like to thank Sahil Dutta, Rodrigo Fernandez, Philip Mader, and Daniel Mertens for their comments on earlier versions of this chapter.

Introduction

The global expansion of the financial sector has transformed capitalism, with significant consequences for the distribution of income, wealth, and power. While the earlier financialization literature often focused on the behavior of shareholders and corporate management, political economists have increasingly zeroed in on dynamics taking place at the core of the financial system, namely the rise of shadow banking, and of market-based finance more generally (Godechot, 2016, Maxfield, Winecoff and Young, 2017, Ricks, 2016, Thiemann, 2018). A new frontier for this research agenda, we argue, is the question of how power operates at the hybrid, public-private core of the monetary system, where banks transact with the central bank (Braun, 2018b).

This chapter is concerned with the economic and political connections between the institutionalization of central bank dominance and the rise and resilience of shadow banking. In a nutshell, we argue that shadow money markets have come to serve as the governance infrastructure for central banks. This *infrastructural entanglement* has increased central banks' dependence on market-based finance, and thus the infrastructural power financial actors are able to exercise in the political process.

Political scientists and sociologists have tended to shy away from this question. Monetary and financial power operates not only "beneath open and immediate political conflict" (Pierson, 2016: 129), but also beneath thick layers of technical complexity. In recent years, important progress has been made in the study of the instrumental and structural power of the financial sector (Baker and Wigan, 2017, Culpepper, 2015, Pagliari and Young, 2016, Woll, 2016). For the most part, however, this research has focused on state-finance interactions that take place on the turf and according to the rules of the political rule-making process. What this literature tends to overlook is a crucial set of interactions between private financial actors and public agencies that take place "beneath open and immediate political conflict", on the turf and according to the rules of financial markets.

The paradigmatic example is modern central banking. The key features of modern central banks are their independence and their (mandated) focus on price stability. This institutional arrangement, which generally prioritizes low inflation over full employment, both stems from and entrenches unequal power between capital and labor in a low-salience, technocratic policy area. Political scientists, sociologists, and economists have thoroughly studied the *political and macroeconomic consequences* of central bank independence (Dietsch, Claveau and Fontan, 2018, McNamara, 2002, Polillo and Guillén, 2005, Posen, 1993). By contrast, with few exceptions focused on low-income countries (Gabor, 2010), little is known about the *financial consequences* of modern central banking. More generally, there is a lack not only of empirical studies, but also of theoretical reflection about

how power operates at the intersection of public monetary authority and private banking and financial markets.

In this chapter, we argue that central banks have acted as decisive catalysts for the crucial development at the heart of financialization: the rise of shadow money and shadow banking. While most accounts explain the rise and resilience of shadow banking as the outcome of market-led financial innovation aided by regulatory capture, we advance a view that places greater emphasis on the role of state actors: shadow money and shadow banking have co-evolved with the elephant in the room of financialization, namely central banking.

Monetary policy represents a peculiar form of economic state power in that it works in and through financial markets (Braun, 2018a, 2018b, Krippner, 2011). Its reach and effectiveness depend directly “on the structure of financial markets and on the economic characteristics of market participants” (ECB, 2000: 47). While the quote illustrates that technocrats were aware of this central bank-finance nexus, the tranquillity of the ‘Great Moderation’ – a two-decade period starting in the late 1980 characterized by low inflation and stable growth rates – was such that (political) economists largely ignored this nexus. Crucially, however, this period of calm and institutionalized central bank dominance coincided with the transformation of traditional banking into “securitized” (Gorton and Metrick, 2012) or “market-based” banking (Hardie and Howarth, 2013, Hardie *et al.*, 2013), and with the growth of the broader shadow banking system (Gabor, 2018, Lysandrou and Nesvetailova, 2015, Thiemann, 2018). The hallmark of that system is the securitization of both sides of banks’ balance sheets – market-based funding via the repo market on the liability side and market-based lending via asset-backed securities (ABSs) on the asset side. These markets were at the heart of the global financial crisis of 2008, which abruptly ended the ‘Great Moderation’ and forced central banks to intervene on an unprecedented scale to stabilize the shadow banking system (Gabor and Ban, 2016, Jacobs and King, 2016, Mehrling, 2010, Murau, 2017).

The global shift towards inflation targeting in the 1990s placed the burden of macroeconomic governance squarely onto the shoulders of central banks. The policy tools of the latter, however, were not necessarily up to the task, and monetary policymakers sought ways to translate their (indirect) control over the interbank money market into control over macroeconomic aggregates (Braun, 2018a). In the process, they shaped “the structure of financial markets” (ECB, 2000: 47) in ways that would support monetary governability. Those ways, it turned out, also boosted the private creation of shadow money.

The remainder of the chapter will develop our argument in three steps. The first section reviews the growing, interdisciplinary literature on the public-private hybridity of money and finance. Understanding that hybridity is key to understanding what is special about central banking as a form

of state agency. As explained in the second section, central bank agency is not primarily administrative, but market-based. Its reach and scope, therefore, is closely intertwined with the reach and scope of those financial markets that constitute the infrastructure for monetary governance. The flipside of that infrastructural entanglement is infrastructural power enjoyed by financial market actors. The third section shows how infrastructural entanglement and power played out in the US and in the euro area. The US Federal Reserve and the European Central Bank both advocated and actively promoted, for monetary policy purposes, the development of shadow money. The conclusion discusses the applicability of our approach to other instances of infrastructural entanglement at the state-finance nexus, and for the study of power in the process of financialization more generally.

1. The essential hybridity of money and finance

The literature on the history of money and finance shows that financial innovation is often driven by the interaction between banking and central banking (Giannini, 2011, Goodhart, 1988, Knafo, 2013, Konings, 2011). When it comes to the more recent rise of shadow banking, however, awareness for the reciprocal nature of this interaction has been less pronounced. The political economy literatures on banking and central banking have largely remained separate. On one hand, comparative political economists have added depth and detail to Zysman's (1983) classic distinction between bank-based and market-based financial systems (Hardie and Howarth, 2013, Hardie *et al.*, 2013). The crucial question of how "the structure of finance contributes to the state's capacity to act in the economy" (Zysman, 1983: 298), which students of earlier historical periods have discussed (Konings, 2011, Krippner, 2011, Strange, 1988), has somewhat been lost in the market-based finance literature. On the other hand, the political-economy literature on central banks has tended to abstract from the operational details of central banking. Whether they focus on international monetary arrangements or on social groups' preferences for inflation, employment or exchange rates, these studies have largely bracketed the question of exactly *how* central banks establish and maintain control over their domestic economies, let alone how they project power in global financial markets (Bernhard, Broz and Clark, 2003, Frieden, 1991, Hall and Franzese, 1998, Hancké, 2013).

What has been missing from these two literatures, thereby preventing their rapprochement, is an awareness of the essential hybridity of money and finance. This is despite a long, interdisciplinary tradition of scholars whose thinking revolved explicitly around hybridity (Innes, 1913, 1914, Keynes, 1930, Schumpeter, 1954). For a number of reasons, however, these authors' insights got lost between the cracks of academic disciplines – economists focusing on private actors and markets, sociologists and political scientists focusing on public actors and institutions. The global financial crisis, however, renewed scholarly interest in the hybridity of money and finance, including in

economics (Mehrling, 2010, 2013), law (Hockett and Omarova, 2017, Pistor, 2013, Ricks, 2016, 2018), and political economy (Braun, 2018b, Gabor and Ban, 2016, Gabor and Vestergaard, 2018, Koddenbrock, 2017, Murau, 2017). The two core tenets of this literature are easily stated. First, money is a liability of financial institutions, that is, credit. Ever since the Bank of England first managed to monopolize the issuance of negotiable banknotes in the mid-19th century (Ingham, 2004: 135), two main forms of credit-money have coexisted: the liabilities of the central bank (reserves and cash) and the liabilities of commercial banks (deposits). Second, while most of the liabilities that circulate as money are created on the balance sheets of private banks, the moneyness of those liabilities depends ultimately on legal rights granted and financial backing provided by the state (Hockett and Omarova 2017). In technical terms, private-sector liabilities trade at par with public-sector liabilities because the former enjoy special privileges granted by the state, including reserve accounts at the central bank, participation in the payment system, and direct access to lender-of-last-resort liquidity.

What this literature offers is not so much a theory, but a close description of ‘actually existing’ capitalist money. This description has far-reaching implications for the political economy of power and institutional change at the center of the monetary and financial system. The remainder of this chapter discusses these implications for the specific case of shadow money, defined as quasi-monetary liabilities created in the shadow banking system. The argument unfolds in two steps. First, the hybridity view reveals that public actors do not just govern private financial markets through rules and regulations. Instead, they often actively *participate in* those markets, which provide the *governance infrastructure through which public actors seek to govern the economy*. Where state agency is market-based, private financial market actors wield *infrastructural power vis-à-vis* public actors (Braun, 2018b). The following section develops this theoretical argument for the infrastructural entanglement between central banks and the shadow banking system.

Second, when private financial actors innovate, they create “shadow money” – financial liabilities that fulfill quasi-monetary functions within the financial system, but without (ex ante) state support (Gabor and Vestergaard, 2016, Murau, 2017). There is nothing new to this – Henry Simons worried about central banks giving private finance “too much freedom [...] in directing changes in the quantity of money and money-substitutes” in 1936 (Simons, 1936: 3). While shadow money greases the wheels of credit creation and securities trading during good times, liquidity tends to evaporate at times of financial stress (Gorton and Metrick, 2012). Classic examples are the repo market at the domestic level, and the Eurodollar market at the international level (Altamura, 2017, Gabor, 2016a, Green, 2016). What the hybridity view reveals is that shadow money does not, as a rule, evolve in a purely private realm. Focusing on the US and Europe, section three shows that central banks can drive private monetary innovation, encouraging finance to monetize new forms of credit.

2. In search of monetary governability: Market-based agency and infrastructural entanglement

Since the onset of modern central banking in the late 19th century, the share of the burden of macroeconomic stabilization carried by monetary policy has greatly increased. In relation to the weight of that burden, monetary policy must be seen as a *weak* instrument of macroeconomic governance. Compared to fiscal policy, the link between monetary policy and macroeconomic outcomes is indirect and prone to disruption. Establishing and maintaining monetary governability therefore requires purposeful action – discursive and institutional – by central bankers (Braun, 2015, 2018a, Dutta, 2018a, Krippner, 2011, Walter, 2019, Wansleben, 2018). In abstract terms, the segment of the economy the central bank controls – the interbank money market – is small and insignificant relative to the economy as a whole. More specifically, central bankers, regardless of the monetary-policy regime they operate under, face two challenges. First, the central bank has direct control only over the *policy* interest rate at which it lends reserves to private financial institutions, whereas the *market* rates at which the latter lend to each other are beyond direct central bank control. This disconnect gives rise to the challenge of monetary policy *implementation* – the challenge of how to deploy the limited instruments of monetary policy to steer short-term interest rates. Second, the challenge of monetary policy *transmission* arises from the gap between this short-term interest rate and the rates of employment, growth, and inflation, which constitute the ultimate targets of most central banks.

In order to tackle these challenges, central banks have historically relied on two types of agency. Like other government bodies, central banks hold and exert *administrative authority*, “setting, interpreting and applying statutory rules” (Hellwig, 2014: 5-6). Most importantly, central banks have a statutory monopoly to create central bank money, which takes the form of cash (notes and coins) and reserves. The latter are deposits held by commercial banks, and sometimes other financial institutions, in accounts at the central bank. Banks need reserves to settle debts among each other, and to make payments to the government. Central banks also have the authority to impose reserve requirements on banks, usually set at a small percentage of (certain) liabilities. Together, banks’ dependence on reserves and central banks’ monopoly on their creation gives central banks significant control over the price of money in the interbank money market. In addition to this core monetary power, the statutory rights of central banks often include far-reaching administrative powers in policy areas such as the payment system, foreign exchange transactions, and banking regulation and supervision. In short, central banks, in pursuit of their policy goals, act on the financial system through administrative authority.

In addition to administrative authority, however, central banks also rely on *market-based agency*. Central banks implement monetary policy by transacting with other (commercial) banks. These are

transactions “on a *quid-pro-quo* basis, such as taking deposits from banks, granting loans to banks, or buying and selling assets in open markets” (Hellwig 2014: 5-6, original emphasis). While other government bodies also engage in market transactions, these transactions are not a policy instrument to move market prices but instead serve a specific purpose (i.e., purchasing land to build a road). For central banks, by contrast, market transactions are the main policy instrument. This market-based agency thus distinguishes central banks from most other government bodies. Whereas the latter act on the economy by setting and enforcing rules, central bank control over economic conditions rests not only on administrative authority, but also on market transactions into which private actors enter at their own discretion.

Central banks shape the structure of the financial system both through administrative authority and through market-based agency. While both types of agency are geared towards monetary governability, they follow different logics and affect the financial system in different ways. Historically, administrative authority has often been geared towards imposing *limits* on private financial transactions for the purpose of enhancing the central bank control over financial conditions. The effectiveness of market-based agency, by contrast, tends to depend on *deep and liquid markets* for money and securities.

The use of administrative authority for monetary governability purposes has a long tradition. In 19th century Britain, the Bank of England routinely targeted financial market practices in order to strengthen its control over the market rate of interest (Knafo 2013: 7, 15). In 1933, the US Federal Reserve issued Regulation Q, which for several decades limited (or prohibited) interest payments on various types of bank deposits (Krippner, 2011). Through this administrative measure, the Fed expanded its direct control over interest rates from the interbank money market to the retail deposit market. Other central banks, too, used ‘direct’ instruments, such as interest rate ceilings and credit controls, to control conditions in credit markets for monetary policy purposes (Baliño and Zamalloa, 1997). While many central banks gradually abandoned such direct monetary policy instruments from the 1980s onwards (see section three below), some countries have continued to rely on them. Most importantly, the People’s Bank of China (PBOC) has resorted to a mix of interest rate ceilings and capital controls in order to square large-scale foreign-exchange interventions with low domestic inflation (Gruin, 2013). More recently, the post-2008 expansion of central bank mandates to include macroprudential responsibilities means that even the most invasive deployment of administrative authority is under consideration by policymakers, including structural reforms that would change the legal, organizational, and economic structure of banks (Omarova, 2018, Thiemann, 2018).

The continued relevance of administrative authority notwithstanding, in the context of the financial liberalization policies of the 1980s, central banks took a decisive turn from ‘direct’ to ‘indirect’ policy

instruments (Baliño and Zamalloa, 1997). Since then, most central banks have sought to steer the market interest rate in the interbank market – the ‘operational target’ of monetary policy – by deploying the trinity of reserve requirements, open market operations, and standing facilities (Bindseil, 2004: 9). This indirect approach has increased the infrastructural entanglement between central banks and those parts of the financial system in which they conduct their open market operations.

Michael Mann developed the concept of infrastructural power to distinguish modern forms of state power from the “despotic power” pre-modern, absolutists rulers had relied on to govern their subjects (Mann, 1993). By contrast, bureaucratic-democratic states developed the capacity to control their territory and population, and thus to “penetrate civil society, and to implement logistically political decisions” (Mann, 1984: 189). While Mann theorized the power of the state, he did acknowledge that infrastructural power was “a two-way street” (Mann, 1993: 59). A state that governs through civil society infrastructures at the same time becomes dependent. Civil-society structures that serve as conduits for governance are empowered vis-à-vis the state.

Today, the financial system is arguably the governance infrastructure *par excellence* (see also Ricks, 2018, Woll, 2017). This allows us to reverse Mann’s theoretical perspective to focus on the infrastructural power of *private actors* over public actors (Braun, 2018b). It should be noted that the mechanism here is different from either instrumental power, which is based on the lobbying capacity of finance, or from structural power, which is based on the ability of finance (and business more generally) to threaten an investment strike. Of course, not all parts of the state rely on financial markets as governance infrastructures in equal measure. Rather, specific parts of the financial system exercise infrastructural power vis-à-vis specific parts of the state. While therefore not universally applicable, the infrastructural power approach offers “a higher-resolution view of the policymaking apparatus, and thus a more nuanced theory of the scope and reach of the political power of finance” (Braun, 2018b: 7).

In the following section, we will zoom in on the most consequential instance of infrastructural entanglement and power in the contemporary financial system – that between central banking and shadow banking. Decisions by most leading central banks to conduct their open market operations in the form of (reverse) repurchase transactions, or repos, made them particularly dependent on deep, liquid and, in the case of the euro area, transnationally integrated, repo markets.

3. Shadow money in the US and in the euro area

Monetary theorists and historians conceptualise the process through which new monies are developed as an eminently private endeavour. For Hyman Minsky (1986: 228), “everyone can create

money; the problem is to get it accepted". Charles Kindleberger (1978) argued that private finance fuels the flames of financial instability by creating close money substitutes that monetize credit. Monetary history provides a long list of such experiments, some of which have crossed over into 'proper', means of settlement: 'money'. In both accounts, and in the large scholarship these have influenced, central banks are silent, and rather helpless, witnesses. The case for controlling the supply of money rests on the ability to correctly identify which new monies matter for creating additional demand pressures. Central banks have suffered so many defeats at the hand of Goodhart's law – "any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes" (Goodhart, 2006: 757) – that there are few left who make a serious case for targeting the supply of money. The age of inflation targeting promised a new scientific paradigm for central banks that did not require them to closely monitor *how* credit is monetised, since *the pace* of monetisation would be set by the interest rate policy of the central bank. A closer look at the historical evolution of shadow money, however, challenges this view.

Shadow money: a very short introduction

The Financial Stability Board defined shadow banking as the "system of credit intermediation that involves entities and activities outside the regular banking system" (FSB, 2011: 3). Shadow money, a recent addition to the monetary vocabulary, conceptualises promises to pay created by banks and shadow banks – such as money market funds or hedge funds – in the process of lending through capital markets (Gabor and Vestergaard, 2016, 2018, Murau, 2017, Pozsar, 2014). It is the money of (globalised) financial systems organised around securities markets. These promises to pay backed by tradable collateral are known as repos or securities financing transactions. Repos derive their moneyiness, understood as their capacity to preserve parity to settlement money, from legal and risk practices of collateral valuation. When a bank creates shadow money, it creates a promise to pay backed by tradable collateral, usually government-issued or private-sector-issued bonds. The holder of shadow money cannot rely on traditional guarantees of banks' promises to pay, namely deposit guarantees and central bank support, but instead relies on collateral. Legally, collateral belongs to the holder because shadow money creation is structured as a sale and repurchase of collateral that belongs to the shadow money issuer. Economically, collateral belongs to the shadow money creator, who assumes the risks and reaps the rewards of securities it deploys as collateral. Put differently, shadow money funds the securities used as collateral. But legal ownership is not sufficient to preserve convertibility at par between shadow and bank money. Rather, collateral is marked to market on a daily basis, to ensure full parity between the market value of collateral posted and the shadow money IOU. Divergences (fall in market price of collateral) are settled by (more) collateral or

cash posted by the shadow money creator. In sum, the term shadow money refers to securities that fulfil the same functions, but do not enjoy the same government guarantees, as money 'proper'.

Since the late 1970s, shadow money has been an attractive method to monetise credit created through securities markets (Ban and Gabor, 2016, Gabor, 2016a). Most notoriously, both Bear Stearns and Lehman Brothers created shadow money to fund their rapidly expanding balance sheets, and both fell because the private mechanism for preserving money – the daily valuation of collateral – proved eminently fragile in moments of crisis. When it did, central banks reacted with a mixture of surprise and disbelief. Ben Bernanke confessed that he had viewed overnight shadow money as the safest funding for (shadow) banks. The ECB wondered how it could have lost sight of an activity that had grown systemic, albeit in the shadows (Gabor and Ban, 2016).

The US Federal Reserve and shadow money

Central banks may not have thought in terms of shadow money, but they were familiar and closely engaged with repo markets. In late 1990s, the US Federal Reserve was confronted with a peculiar predicament. While the world was celebrating central bank independence as a mark of 'scientific' economic governance after the populist era of monetizing government bonds, the US Federal Reserve worried about projections that the US government would pay down all its debt by 2012. A world without US government debt, they worried, was a world filled with monetary dangers. Market participants would not have a safe, liquid asset to turn to in times of distress.

The US Fed dismissed proposals that the government put its securities-creating powers in the service of capital markets, issuing debt divorced from its fiscal needs. This raised complex questions of what to do with the cash raised, questions that neither the Fed nor the US Treasury thought could be addressed without fundamentally involving the state in the process of private resource allocation. Instead, the Fed embraced a market-solution that put shadow money creation at its core. It proposed to use shadow money creation in order to create private substitutes for US Treasuries. Shadow money would liquefy collateral securities such as mortgage-backed securities and asset backed securities.

Rather than seeking to limit shadow money supply, the Fed actively encouraged its expansion, seeking market solutions to political problems. It lobbied Congress to ensure that holders of shadow money backed by private (securitised) collateral had the same legal rights to collateral as those holding shadow money issued against US government debt. The Fed also changed its lending practices. In the early 2000s, banks could issue shadow money backed by private collateral to borrow from the Fed. These concrete steps contrast starkly with the picture of central banks watching

passively from the margins, as financial institutions find new ways to monetize credit and circumvent rules (Gabor, 2016a).

The European Central Bank and shadow money

The European Central Bank provides a similar challenge to the received wisdom that innovation occurs in the market and is followed by adaptation in policymaking. Consider the early and influential statement of this view by Folkerts-Landau and Garber (1992), who criticised the future ECB's draft statute for conceiving of the central bank as a pure "monetary policy rule" without any explicit financial responsibilities. Anticipating the rise of market-based banking, Folkerts-Landau and Garber criticised this narrow conception of central banking on the grounds that without a strong central bank, "liquid, securitized financial markets" were prone to financial instability. Should it develop nonetheless, the authors predicted, such a system would transform the ECB from a "monetary policy rule" into a full-fledged central bank "with broad banking functions – lender-of-last-resort, involvement in the payment system, and the supervision and regulation of the banking system" (1992: 25). Although prescient, this account is one-sided in that it neglects the ECB's active role in the process of financial innovation.

In its early days, the ECB actively shaped the creation of shadow euros, that is, of shadow money created against euro-area securities collateral. For the ECB, it wasn't so much financial stability that was at stake in its active encouragement of financial innovation, since the institution only had a mandate for price stability, as the effectiveness of monetary policy. The designers of the ECB were well aware of Minsky's insight that evolutionary changes in finance can pose significant challenges for monetary policy making, and identified those evolutionary changes in the increasing importance of securities markets. But larger securities markets sharpened the contradictions of a single currency with many sovereign bond markets. The ECB worried that the transmission mechanism of monetary policy would be impaired because of the differences in liquidity and yield across the public debt markets of the countries participating in the euro project.

The ECB found itself in a predicament similar to that confronting the US Fed at the time. The solution to its diagnosed problem was political: pulling together sovereign debt issuance into Eurobonds. Since this political solution turned out to be impossible to deliver, the ECB turned to shadow euros. It decided that it would organise the implementation of monetary policy via shadow euros that treated all euro area government bonds as equal collateral. Put simply, the ECB would not follow the traditional approach to open market operations, that involved outright buying (and selling) government bonds from (to) banks. Rather, it would lend to banks via repo transactions, with the collateral framework organised so that the nationality of government bonds did not matter. A Greek

bank could borrow from the Eurosystem – by issuing repos (shadow money) to the ECB – on the same collateral terms if it used Greek government debt or German bunds as collateral.

In doing so, the ECB stressed that it hoped to set an example that private finance would follow. Shadow euros offered a vehicle for the ECB to incentivise the private sector to integrate government bond markets, liquefying those public securities that did not benefit from the size of the Italian bond market or the fiscal reputation of the German bund. This turned out to be a strikingly, albeit temporarily, successful experiment. By the time of the collapse of Lehman, private shadow euro creation had risen to around EUR 7 trillion, of which EUR 6 trillion were backed by sovereign collateral.

Shadow money and infrastructural power

The growing importance of shadow dollars and shadow euros simultaneously reflects an evolutionary shift in credit creation via securities markets and deliberate state policy to solve intractable political problems posed by the rise of market-based finance. If shadow money is a mark of the growing infrastructural power of private finance, then the crisis of shadow money in both Europe and the US provides several insights into the limits and potentialities of that infrastructural power. Historically, shadow money is not exceptional in that its privately-produced moneyiness could not withstand the pressures of a financial crisis. The crisis of shadow money, conceived as a run on US repo markets (Gorton and Metrick, 2012) and a run on periphery sovereign collateral in the euro area (Gabor and Ban, 2016) suggests that infrastructural entanglement, no matter how deep, cannot generate the immediate state responses that would preserve shadow moneyiness. It took the Federal Reserve several months, and the collapse of Bear Sterns and Lehman Brothers, to introduce measures that safeguarded shadow dollar moneyiness, notably the term securities lending facility and the primary dealer credit facility (Gabor, 2016a, Murau, 2017). More strikingly, and despite its substantially increased public communication about fiscal policy (Diessner and Lisi, forthcoming), it took the European Central Bank three long years to negotiate a political compromise that allowed it to stabilise shadow euros through the Outright Monetary Transactions program (Gabor and Ban 2016). Put differently, private finance's ability to put infrastructural power in the service of its survival, threatened by the crisis, is not automatic.

Paradoxically, the limits to infrastructural power *during* the financial crisis translate into opportunities in the *post*-crisis environment. Here, the interests of the shadow banking sector have proven enormously resilient, in spite of the fact that academics, regulators, and politicians had singled out shadow banking as the key culprit of the crisis. Various recent studies have shown that those interests found their way into the political process via the alliance between central banking

and shadow banking. Thus, the ECB played a crucial role in fending off an aggressive proposal by the European Commission for a financial transaction tax that would have taxed repo transactions (Gabor, 2016b, Kalaitzake, 2017). Similarly, the ECB went out of its way to protect the securitization market. It provided collateral easing and quantitative easing, and successfully lobbied the European Commission and national governments for regulatory easing (Braun, 2018b). In both cases, the ECB cited concerns over the potential negative consequences for monetary governability. This is the transmission mechanism of the infrastructural power of shadow banking: the ECB's readiness to throw around its weight in Brussels to protect the financial infrastructure through which it governs the economy.

Conclusion

Financialization is a process of enormous complexity. Determining where power and agency reside, and if and how they drive financialization, are very difficult analytical challenges. Private financial innovation, the instrumental power of financial actors to influence political decision-makers through lobbying – these are sources of power that have helped the rise and resilience of shadow banking. They cannot explain, however, why financial innovation in this area has partly been state-led, with central banks actively promoting the development of deep, liquid, and transnationally integrated repo markets. They also cannot explain why, in the global financial crisis, central banks backstopped some forms of shadow banking but not others. When securitization markets were threatened by market turmoil or by regulatory action, the Fed and the ECB came to their rescue. This chapter has argued that an important source of power for shadow banks is their infrastructural entanglement with central banks. Central banks depend on shadow bank activities for the implementation and transmission of monetary policy. Herein lays the infrastructural power of the issuers of shadow money.

Across the world, policy implementation by central banks has come to rely on open market operations in domestic repo markets. This marketization of monetary policy has seen a new twist with the widespread adoption, in the aftermath of the global financial crisis, of 'unconventional' monetary policy measures, notably quantitative easing. Here, different types of purchase programmes imply entanglement with different segments of the financial system. Thus, the ECB bought mostly government bonds and corporate bonds, whereas the Fed bought large quantities of mortgage-backed securities. The Bank of Japan and the Swiss National Bank, by contrast, purchased large quantities of domestic (BoJ) and foreign (SNB) equities, thus giving rise to infrastructural entanglement with a different financial market segment.

Finally, infrastructural entanglement and power are not limited to monetary policy, but are increasingly important features of financial systems around the world. At the national level, the marketization of sovereign debt management practices has certainly increased infrastructural entanglement between treasuries and capital markets (Dutta, 2018b, Fastenrath, Schwan and Trampusch, 2017, Lagna, 2016, Lemoine, 2016). At the European level, the European Commission's Capital Markets Union is best understood as an experiment in "governing through financial markets" (Braun, Gabor and Hübner, 2018). In alliance with the member states and the ECB, the Commission seeks to boost investment, stability, and cross-border risk sharing by expanding cross-border capital markets and securitisation (Braun and Hübner, 2018, Engelen and Glasmacher, 2018). Nor is infrastructural entanglement between the state and financial markets limited to the Western world. The Chinese state in particular has used the financial system to project power and to accelerate economic development (Gruin, 2013, Wang, 2015). And while concerns over the sustainability of the growth of shadow money in China have grown, the government has been hesitant to reign in the shadow banking sector (Gabor, 2018). Disentangling finance and the state, and thus curbing the infrastructural power of the former is not, it appears, on the agenda of the Communist Party.

References

- Altamura, C.E., 2017. *European Banks and the Rise of International Finance: The Post-Bretton Woods Era*. Routledge.
- Baker, A. and Wigan, D., 2017. Constructing and Contesting City of London Power: NGOs and the emergence of Noisier Financial Politics. *Economy and Society*, 46 (2), pp. 185-210.
- Baliño, T.J.T. and Zamalloa, L.M. (eds.), '1997. *Instruments of Monetary Management: Issues and Country Experiences*. Washington, D.C.: International Monetary Fund.
- Ban, C. and Gabor, D., 2016. The political economy of shadow banking. *Review of International Political Economy*, 23 (6), pp. 901-914.
- Bernhard, W., Broz, J.L. and Clark, W.R. (eds.), '2003. *The political economy of monetary institutions*. Cambridge, MA: MIT Press.
- Bindseil, U., 2004. *The operational target of monetary policy and the rise and fall of reserve position doctrine*. ECB Working Paper no. 372. Frankfurt: European Central Bank.
- Braun, B., 2015. Governing the future: The European Central Bank's expectation management during the Great Moderation. *Economy and Society*, 44 (3), pp. 367-391.
- Braun, B., 2018a. 'Central bank planning? Unconventional monetary policy and the price of bending the yield curve'. In: Beckert, J. and Bronk, R. (eds.) *Uncertain Futures: Imaginaries, Narratives, and Calculation in the Economy*. Oxford: Oxford University Press, pp. 194-216.
- Braun, B., 2018b. Central banking and the infrastructural power of finance: The case of ECB support for repo and securitization markets. *Socio-Economic Review*.
- Braun, B., Gabor, D. and Hübner, M., 2018. Governing through financial markets: Towards a critical political economy of Capital Markets Union. *Competition & Change*, 22 (2), pp. 101-116.
- Braun, B. and Hübner, M., 2018. Fiscal fault, financial fix? Capital Markets Union and the quest for macroeconomic stabilization in the euro area. *Competition & Change*, 22 (2), pp. 117-138.
- Culpepper, P.D., 2015. Structural power and political science in the post-crisis era. *Business and Politics*, 17 (3), pp. 391-409.
- Diessner, S. and Lisi, G., forthcoming. 'Masters of the 'masters of the universe'? Monetary, fiscal and financial dominance in the Eurozone'. *Socio-Economic Review*.
- Dietsch, P., Claveau, F. and Fontan, C., 2018. *Do Central Banks Serve the People?* Cambridge, MA: Polity.
- Dutta, S.J., 2018a. *Depoliticising money? The transformation from Keynesian to neoliberal monetary governance in Britain*. Presented to 'Financialisation and the future of money' workshop, Brighton, 16-18 May.
- Dutta, S.J., 2018b. Sovereign debt management and the globalization of finance: Recasting the City of London's 'Big Bang'. *Competition & Change*, 22 (1), pp. 3-22.
- ECB, 2000. 'Monetary policy transmission in the euro area'. Monthly Bulletin July 2000.
- Engelen, E. and Glasmacher, A., 2018. The waiting game: Or, how securitization became the solution to the Eurozone's growth problem. *Competition & Change*, 22 (2), pp. 165-183.
- Fastenrath, F., Schwan, M. and Trampusch, C., 2017. Where states and markets meet: the financialisation of sovereign debt management. *New Political Economy*, 22 (3), pp. 273-293.
- Folkerts-Landau, D. and Garber, P.M., 1992. 'The European Central Bank: A Bank or a Monetary Policy Rule'. *NBER Working Paper no. 4016*. Cambridge: National Bureau of Economic Research.

- Frieden, J.A., 1991. Invested Interests: The Politics of National Economic Policies in a World of Global Finance. *International Organization*, 45 (4), pp. 425-451.
- FSB, 2011. *Shadow Banking: Strengthening Oversight and Regulation*. Financial Stability Board. Available at: http://www.fsb.org/wp-content/uploads/r_111027a.pdf [Accessed 1 March, 2019].
- Gabor, D., 2010. *Central banking and financialization: a Romanian account of how Eastern Europe became subprime*. Basingstoke: Palgrave Macmillan.
- Gabor, D., 2016a. The (impossible) repo trinity: the political economy of repo markets. *Review of International Political Economy*, 23 (6), pp. 967-1000.
- Gabor, D., 2016b. A step too far? The European Financial Transactions Tax on shadow banking. *Journal of European Public Policy*, 23 (6), pp. 925-945.
- Gabor, D., 2018. Goodbye (Chinese) Shadow Banking, Hello Market-based Finance. *Development and Change*, Epub ahead of print.
- Gabor, D. and Ban, C., 2016. Banking on bonds: The New Links Between States and Markets. *Journal of Common Market Studies*, 54 (3), pp. 617-635.
- Gabor, D. and Vestergaard, J., 2016. *Towards a theory of shadow money*. INET Working Paper. London: Institute for New Economic Thinking.
- Gabor, D. and Vestergaard, J., 2018. Chasing unicorns: the European single safe asset project. *Competition & Change*, 22 (2), pp. 139-164.
- Giannini, C., 2011. *The age of central banks*. Cheltenham: Edward Elgar.
- Godechot, O., 2016. Financialization is marketization! A study of the respective impacts of various dimensions of financialization on the increase in global inequality. *Sociological Science*, 3 495-519.
- Goodhart, C., 1988. *The Evolution of Central Banks*. Cambridge, MA: MIT Press.
- Goodhart, C., 2006. The ECB and the Conduct of Monetary Policy: Goodhart's Law and Lessons from the Euro Area. *JCMS: Journal of Common Market Studies*, 44 (4), pp. 757-778.
- Gorton, G. and Metrick, A., 2012. Securitized banking and the run on repo. *Journal of Financial Economics*, 104 (3), pp. 425-451.
- Green, J., 2016. Anglo-American development, the Euromarkets, and the deeper origins of neoliberal deregulation. *Review of International Studies*, 42 (3), pp. 425-449.
- Gruin, J., 2013. Asset or liability? The role of the financial system in the political economy of China's rebalancing. *Journal of Current Chinese Affairs*, 42 (4), pp. 73-104.
- Hall, P.A. and Franzese, R.J., 1998. Mixed Signals: Central Bank Independence, Coordinated Wage Bargaining, and European Monetary Union. *International Organization*, 52 (3), pp. 505-535.
- Hancké, B., 2013. *Unions, Central Banks, and EMU: Labour Market Institutions and Monetary Integration in Europe*. Oxford: Oxford University Press.
- Hardie, I. and Howarth, D., 2013. *Market-based banking and the international financial crisis*. Oxford: Oxford University Press.
- Hardie, I. et al., 2013. Banks and the false dichotomy in the comparative political economy of finance. *World Politics*, 65 (4), pp. 691-728.
- Hellwig, M., 2014. 'Financial Stability, Monetary Policy, Banking Supervision, and Central Banking'. Paper presented at the First ECB Forum, Sintra, 25 May 2014. Preprints of the Max Planck Institute for Research on Collective Goods, 2014/9.

- Hockett, R.C. and Omarova, S.T., 2017. The Finance Franchise. *Cornell Law Review*, 102 1143-1218.
- Ingham, G., 2004. *The nature of money*. Cambridge: Polity.
- Innes, M.A., 1913. What is money? *Banking Law Journal*, 30 377-408.
- Innes, M.A., 1914. The credit theory of money. *Banking Law Journal*, 31 151-168.
- Jacobs, L. and King, D., 2016. *Fed Power: How Finance Wins*. Oxford: Oxford University Press.
- Kalaitzake, M., 2017. Death by a Thousand Cuts? Financial Political Power and the Case of the European Financial Transaction Tax. *New Political Economy*, 22 (6), pp. 709-726.
- Keynes, J.M., 1930. *A treatise on money*. New York: Harcourt, Brace and company.
- Kindleberger, C.P., 1978. *Manias, panics, and crashes : a history of financial crises*. New York: John Wiley & Sons.
- Knafo, S., 2013. *The Making of Modern Finance: Liberal Governance and the Gold Standard*. Abingdon: Routledge.
- Koddenbrock, K., 2017. *What money does: An inquiry into the backbone of capitalist political economy*. Cologne: Max Planck Institute for the Study of Societies.
- Konings, M., 2011. *The development of American finance*. Cambridge: Cambridge University Press.
- Krippner, G.R., 2011. *Capitalizing on Crisis. The Political Origins of the Rise of Finance*. Cambridge, MA: Harvard University Press.
- Lagna, A., 2016. Derivatives and the financialisation of the Italian state. *New Political Economy*, 21 (2), pp. 167-186.
- Lemoine, B., 2016. *L'ordre de la dette: Enquête sur les infortunes de l'État et la prospérité du marché*. La Découverte.
- Lysandrou, P. and Nesvetailova, A., 2015. The role of shadow banking entities in the financial crisis: a disaggregated view. *Review of International Political Economy*, 22 (2), pp. 257-279.
- Mann, M., 1984. The autonomous power of the state: its origins, mechanisms and results. *European journal of sociology*, 25 (02), pp. 185-213.
- Mann, M., 1993. *The sources of social power. Vol. II: The rise of classes and nation-states, 1760-1914*. Cambridge: Cambridge University Press.
- Maxfield, S., Winecoff, W.K. and Young, K.L., 2017. An empirical investigation of the financialization convergence hypothesis. *Review of International Political Economy*, 24 (6), pp. 1004-1029.
- McNamara, K., 2002. Rational Fictions: Central Bank Independence and the Social Logic of Delegation. *West European Politics*, 25 (1), pp. 47-76.
- Mehrling, P., 2010. *The new Lombard Street: How the Fed became the dealer of last resort*. Princeton, NJ: Princeton University Press.
- Mehrling, P., 2013. Essential hybridity: A money view of FX. *Journal of Comparative Economics*, 41 (2), pp. 355-363.
- Minsky, H.P., 1986. *Stabilizing an unstable economy*. New Haven: Yale University Press.
- Murau, S., 2017. Shadow Money and the Public Money Supply: The Impact of the 2007-9 Financial Crisis on the Monetary System. *Review of International Political Economy*, 24 (5), pp. 802-838.
- Omarova, S.T., 2018. *Central Banks, Systemic Risk and Financial Sector Structural Reform*. Ithaca, NY: Cornell University.

- Pagliari, S. and Young, K., 2016. The interest ecology of financial regulation: interest group plurality in the design of financial regulatory policies. *Socio-Economic Review*, 14 (2), pp. 309-337.
- Pierson, P., 2016. 'Power in Historical Institutionalism'. In: Fioretos, O., Falleti, T.G. and Sheingate, A. (eds.) *The Oxford Handbook of Historical Institutionalism*. Oxford: Oxford University Press, pp. 124-141.
- Pistor, K., 2013. A legal theory of finance. *Journal of Comparative Economics*, 41 (2), pp. 315-330.
- Polillo, S. and Guillén, M.F., 2005. Globalization Pressures and the State: The Worldwide Spread of Central Bank Independence. *American Journal of Sociology*, 110 (6), pp. 1764-1802.
- Posen, A.S., 1993. 'Why central bank independence does not cause low inflation: there is no institutional fix for politics'. In: O'Brien, R. (ed.) *Finance and the International Economy: 7, The AMEX Bank Review Prize Essays*. Oxford: Oxford University Press, pp. 41-65.
- Pozsar, Z., 2014. *Shadow Banking: The Money View*. OFR Working Paper 14-04. Office of Financial Research.
- Ricks, M., 2016. *The Money Problem: Rethinking Financial Regulation*. Chicago, IL: University of Chicago Press.
- Ricks, M., 2018. Money as infrastructure. *Columbia Business Law Review*, (3), pp. 757-851.
- Schumpeter, J.A., 1954. *History of Economic Analysis*. London: Allen & Unwin.
- Simons, H.C., 1936. Rules versus authorities in monetary policy. *Journal of political economy*, 44 (1), pp. 1-30.
- Strange, S., 1988. *States and markets*. London: Continuum.
- Thiemann, M., 2018. *The Growth of Shadow Banking: A Comparative Institutional Analysis*. Cambridge: Cambridge University Press.
- Walter, T., 2019. Formalizing the future: How central banks set out to govern expectations but ended up (en-)trapped in indicators. *Historical Social Research*, forthcoming.
- Wang, Y., 2015. The rise of the 'shareholding state': financialization of economic management in China. *Socio-Economic Review*, 13 (3), pp. 603-625.
- Wansleben, L., 2018. How expectations became governable: institutional change and the performative power of central banks. *Theory and Society*, 47 (6), pp. 773-803.
- Woll, C., 2016. Politics in the Interest of Capital: A Not-So-Organized Combat. *Politics & Society*, 44 (3), pp. 373-391.
- Woll, C., 2017. 'State Action in Financial Times'. In: King, D. and Le Galès, P. (eds.) *Reconfiguring European States in Crisis*. Oxford: Oxford University Press, pp. 201-214.
- Zysman, J., 1983. *Governments, Markets, and Growth: Financial Systems and the Politics of Industrial Change*. Ithaca: Cornell University Press.