

Central banking and the infrastructural power of finance: The case of ECB support for repo and securitization markets

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Abstract

The pre-crisis rise and post-crisis resilience of European repo and securitisation markets represent political victories for the interests of large banks. To explain when and how finance wins, the literature emphasises lobbying capacity (instrumental power) and the financial sector's central position in the economy (structural power). Increasingly, however, finance also enjoys infrastructural power, which stems from entanglements between specific financial markets and public-sector actors, such as treasuries and central banks, that govern by transacting in those markets. To demonstrate the analytical value of this perspective, the article traces how the European Central Bank, motivated by monetary policy considerations, has shaped post-crisis financial policymaking in the EU. It shows that the ECB has played a key part in fending off a financial transaction tax on repos and in shoring up and rebuilding the securitisation market. With market-based forms of state agency on the rise, infrastructural entanglement and power shed new light on the politics of finance.

Key words: European Central Bank, monetary policy, market-based banking, shadow banking, financialization, structural power

JEL classification: E58 central banks and their policies, G23 non-bank financial institutions, G28 government policy and regulation

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Although we work through financial markets, our goal is to help Main Street, not Wall Street.

(J. Yellen in her first speech as Chairwoman of the Federal Reserve, 2014)

1. Introduction

Following the global financial crisis, the European Commission proposed taxing repos and reining in securitisation, in an effort to tackle the two financial markets at the heart of European shadow banking. Several years and policy battles later, repos are exempt from a defanged financial transaction tax proposal, while reviving securitisation is a top EU policy priority. Why did financial-sector interests prevail? Proposing a new theoretical approach to the politics of finance, this article focuses on the power relations at the hybrid intersection of private banking and public central banking. Much has been written about the politics leading up to and protecting central bank independence, which both stems from and entrenches unequal power between capital and labour in a low-salience, technocratic policy area. By contrast, the literature has less to say about how, once central bank independence is established, power operates at the intersection of public monetary authority and private financial markets (Conti-Brown, 2016; Jacobs and King, 2016). How – beyond keeping the lid on inflation – does monetary technocracy benefit financial interests and foster financialisation? Does it matter that central banks ‘work through financial markets’ in order to ‘help Main Street’ (Yellen, 2014)?

The marketisation of financial intermediation is a key aspect of financialisation (Davis and Kim, 2015; Godechot, 2016; Maxfield et al., 2017). The rise of what has variously been labelled ‘shadow banking’ (Mehrling, 2010), ‘securitized banking’ (Gorton and Metrick, 2012) or ‘market-based banking’ (Hardie et al., 2013a) has been a boon to the financial sector. Fee-based income, regulatory arbitrage, bigger balance sheets and higher leverage ratios have boosted profits and remuneration (Thiemann, 2014; Godechot, 2016; Goldstein and Fligstein, 2017). Despite being seen as the chief culprit of the global financial crisis, market-based banking has shown remarkable resilience since 2008 (Ban et al., 2016). In Europe, following a brief period of stigmatisation, it is at the heart of ‘Capital Markets Union’, the European Commission’s attempt to build a more market-based financial system. This surprising outcome indicates substantial political support for financial-sector interests.

The political economy literature emphasises two forms of political power wielded by the financial sector: *instrumental power*, exercised through lobbying, and *structural power*, which derives from the financial sector’s privileged position in financialised economies (Culpepper and Reinke, 2014; Woll, 2016; Pagliari and Young, 2016). This literature has yielded important results, but its treatment of the state and of finance as two separate spheres, and of state agency as purely regulatory, is problematic. It is at odds with the crucial insight of a discipline-spanning body of research that maintains that, at the centre of the financial system, state and market actors form a hybrid public–private partnership, or a franchise system (Ingham 2004; Mehrling 2010; Pistor, 2013; Hockett and Omarova, 2017; Ricks 2017). Whereas the regulatory view conceptualises state–finance interactions as ‘regulation and governance through rule making and rule enforcement’ (Levi-Faur, 2005: 17), this article, drawing on the hybridity view, maintains that state agency is often market-based – state actors appear not just as *regulators of* but also as *participants in* financial markets (Hockett and Omarova, 2014).

This article advances a simple theoretical argument: when state actors transact in financial markets for governance purposes they create infrastructural entanglements, which constitute a distinct source of financial-sector power. In the case at hand, repo and securitisation markets – the two main pillars of market-based banking – provide the infrastructure through which the European Central Bank (ECB) implements its monetary policy. This entanglement

makes central bankers, who seek to maximise their economic steering capacity, dependent on bankers, giving the latter infrastructural power. This has distributional consequences: financial institutions benefit from their infrastructural role in the monetary system, including through interest payments on central bank reserves – which come at a fiscal cost to taxpayers (Ricks, 2017, p. 35) – and, as shown below, through preferential treatment in the political process.

Michael Mann, who coined the concept, referred primarily to the infrastructural power of the state over civil society (Mann 1984; 1993). From this perspective, it appears that when treasuries, monetary authorities, or public development banks harness financial markets as vehicles of state power, they generally strengthen state capacity (Konings, 2011; Krippner, 2011; Knafo, 2013; Quinn, 2017). Going further, others argue that such infrastructural entanglements provide grounds for ‘superseding the price mechanism’ in certain parts of the financial system, or for democratising finance altogether (Ricks, 2017, p. 64; Block, 2014; Hockett and Omarova, 2017). The reverse dynamic, by contrast, is less understood: the political power that accrues to *private financial actors* as a result of state actors seeking to govern through financial markets. Tackling this issue, the present article sheds new light on the question of the autonomy of the state from business (Miliband, 1969; Poulantzas, 1973; Evans *et al.*, 1985). Explaining the ECB’s support for repo and securitisation markets by the central bank’s dependence on these financial infrastructures, the article adds an important piece to the puzzle of how finance wins, while at the same time highlighting policymaking as a facet of central banking that, at a time of heightened concerns about central bank independence and legitimacy, deserves greater scrutiny (Fontan *et al.*, 2016; Braun 2017).

Methodologically, the article follows an inductive process-tracing approach (Trampusch and Palier, 2016). It studies the ECB’s involvement in post-crisis financial policymaking to determine whether accounting for infrastructural power helps to explain the resilience of market-based banking. Empirical evidence is drawn from the full range of official ECB documentation for the period from 1999 to 2017. In addition, the analysis draws on 14 interviews (not coded) with key officials at the ECB and other regulatory and policymaking bodies, as well as with financial market participants, conducted between March 2013 and March 2017 in Frankfurt, Brussels and London (see Appendix 1). Inevitably, there are limitations to the data. As a rule, central bankers do not divulge confidential information, while their public pronouncements are strategic and need to be taken with a grain of salt. Wherever possible, the analysis therefore uses multiple sources for the purpose of triangulation. Given the absence of ‘smoking guns’ or counterfactuals, the focus is on establishing the temporal sequence of events and on tracing the origins of concepts and policies.

The article proceeds as follows. The next section develops the concept of market-based state agency, with a particular focus on central banking. Section three explains why existing concepts of financial sector power are insufficient to explain the resilience of market-based banking, and introduces infrastructural power as an important sub-type of structural power. Section four focuses on the marketisation of bank *funding* via the repo market, and on the ECB’s key role in preventing a financial transaction tax on repo. The securitisation of bank *lending* is covered in section five, which traces the ECB’s efforts to redesign and revive the securitisation market. Section five concludes with a global outlook on the growing role in economic governance for market-based state agency.

2. Taking central banking seriously: governing by transaction

Central banks have always occupied a hybrid position, perched precariously between the state and the financial system (Mehrling, 2010; Knafo 2013; Pistor, 2013). Central banking is market-based in the sense that the implementation and transmission of monetary policy occurs through financial markets. The challenge of *implementation* arises from the fact that the operational target of monetary policy – usually the over-night interbank interest rate – is

a market price. The challenge of *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 monetary policy. Transmission, then, is about making policy rate signals have real effects on aggregate economic activity.

The *instruments* through which central banks establish and maintain control over the economy change over time, with important implications for the political economy of money and finance. Up until the 1980s, central banks such as the Bundesbank considered the non-market features of ‘organised capitalism’ conducive to macroeconomic governability, supporting banks’ embeddedness in corporate networks, relationship-based banking and even cohesive trade unions (Hall and Franzese, 1998; Rajan and Zingales, 2003, p. 38). For their monetary policy operations, central banks relied on ‘direct’ instruments, such as interest rate controls and credit ceilings (Baliño and Zamalloa, 1997). For a time, then, central banking resembled the administrative and regulatory agency through which other parts of the state act on the economy. Working with this administrative conception of central bank agency ever since, the political economy literature has shed light on the delegation of power to central bank technocrats, but has failed to elucidate the politics of how, once empowered, central bankers act on the economy. This became particularly problematic when, in the context of financial liberalisation in the 1980s, central bank agency became more market-based. Specifically, central banks shifted from ‘direct’ to ‘indirect’ monetary policy instruments – the triad of reserve requirements, standing facilities and open market operations (Baliño and Zamalloa, 1997). As part of the latter, central banks, including the ECB, adopted financial practices from the private sector, notably mark-to-market techniques, margin calls and haircuts (Gabor and Ban, 2016). The ECB took the marketisation of monetary policy to new heights when, in 2005, it outsourced the decision over the collateral eligibility of euro-area sovereign bonds to private credit rating agencies (Orphanides, 2017).

A small, interdisciplinary literature has studied the political economy implications of this shift towards market-based central banking. Perry Mehrling (2010, p. 15) has argued that because the US Fed was ‘only one bank and ultimately small relative to the system it engages’ and therefore ‘not all-powerful’, its room for manoeuvre was severely restricted during the 2007–2008 financial crisis (cf. Murau, 2017). Putting this insight in a broader political context, Greta Krippner (2011, p. 147) has shown how, during the 1990s, a shift in monetary policy implementation ‘from state institutions to markets’ accelerated the financialisation of the US economy.¹ Most recently, Lawrence Jacobs and Desmond King’s (2016, p. 9) critique of the Fed as the chief ‘institutional enabler’ of finance and financialisation has brought the politics of market-based state agency to the attention of a broader audience.

Building on this literature, this article argues that the ECB is different from other EU governance bodies. It is not only a *central* bank that holds and exerts administrative authority – ‘setting, interpreting and applying statutory rules’ – but also a central *bank* that trades in financial claims with other, private-sector banks (Hellwig, 2014, p. 5). Thus, the central bank’s control over macroeconomic conditions depends on financial transactions into which private actors enter at their own discretion, creating infrastructural entanglements with those financial markets that serve as the conduits for monetary policy.

3. Market-based banking and the infrastructural power of finance

The period following the signing of the Maastricht Treaty in 1992 coincided with the transformation of continental Europe’s traditionally bank-based financial landscape into a system based more on arms-length market transactions. Traditionally, European banks have engaged in relationship-based lending financed by customer deposits. While banks continue to play a central role in European credit intermediation, the hallmark of the new business model has been the marketisation of both sides of banks’ balance sheets (Hardie *et al.*, 2013a,

¹ Daniela Gabor’s (2011) work on Romania has shown that the world’s financial centres are not the only places in which central banking and financialisation are tightly linked.

b). On the asset side, banks securitise loans into asset-backed securities that are sold to investors. On the liability side, banks complement deposit financing by borrowing in the secured money market, where securities (including securitised loans) serve as collateral. This business model of market-based banking is part of the broader shadow banking system that includes non-bank financial institutions, such as money market mutual funds and asset managers (Lysandrou and Nesvetailova 2015).

From a political economy perspective, market-based banking, and shadow banking more broadly, matter for three main reasons: systemic risk, corporate finance and inequality. The 2008 systemic financial crisis was caused by losses on securitised loans on the asset side and a freeze of short-term money market funding on the liability side of banks' balance sheets (Acharya *et al.*, 2013; Gorton and Metrick, 2012). Second, the buffer function associated with relationship-based banking is diminished with market-based banking, under which borrowing conditions for firms and households depend much more directly on developments in global capital markets (Hardie *et al.*, 2013a). Third, the marketisation of financial intermediation has been a key contributor to the growth in inequality in OECD countries (Godechot, 2016; cf. Flaherty, 2015; Herzog, 2017).

Hardie *et al.* (2013b, p. 10) have explained the rise of market-based banking by profit-oriented business decisions, emphasising 'the role of bankers themselves as an autonomous and primary driver of change' (cf. Fligstein and Habinek, 2014). This view is consistent with structural explanations of the rise of the shadow banking system, including both 'endogenous' (regulatory arbitrage and financial innovation) and 'exogenous' (search for yield among investors) explanations (Lysandrou and Nesvetailova, 2015). However, these explanations of the pre-crisis rise of market-based banking cannot account for its post-crisis resilience, which, in an unfriendly regulatory environment, required substantial political support.

To explain how finance musters such political support, political economists study two types of power. Conceptualising 'politics as organised combat' (Hacker and Pierson, 2011), the literature on *instrumental power* emphasises organised interests, lobbying and regulatory capture. It shows that the financial sector's high levels of unity and organisation often bring favourable political outcomes (Pagliari and Young, 2016; Young and Pagliari, 2017). Since low issue salience and 'quiet' politics generally benefits business interests (Culpepper, 2010; Massoc, 2017;), civil society-based advocacy is most effective when it succeeds in making policy issues salient and 'noisy' – as it did, in some areas of financial policy, in the aftermath of the global financial crisis (Ziegler and Woolley, 2016; Baker and Wigan, 2017; Kastner, 2018). The second approach emphasises the dependence of the state on private investment to generate growth and employment, and the resulting *structural power* of business in general, and of finance in particular (Lindblom, 1977; Culpepper, 2015; Woll, 2016). While business actors *can* deploy this power 'deliberately, with strategic intent' (Culpepper and Reinke, 2014, p. 430), the distinguishing feature of structural power is that it achieves political forbearance without the need for business to organise and act in concert.

But what if, as in the two case studies below, different governmental actors pull in different directions? Here, an implicit assumption becomes problematic: both instrumental and structural power approaches see economic governance as a purely administrative activity. In this view, economic governance takes place on the turf and according to the rules of the (regulatory) *state*, taking the form of 'rule making and rule enforcement' (Levi-Faur, 2005: 17). Crucially, however, forms of economic governance exist that are implemented on the turf and according to the rules of *markets*. Such market-based forms of state agency feature particularly prominently at the hybrid centre of the financial system, where the state has outsourced certain monetary functions to the private sector (Hockett and Omarova, 2014; 2017; Ricks, 2017). Here, state actors – notably the central bank and the treasury – routinely enter transactions with private-sector counterparties, buying and selling financial claims for public policy purposes. This leads to the main theoretical argument of the present article: those parts of the financial system that serve as conduits for such market-based economic governance enjoy *infrastructural power*. Closely related to structural power in that it rests on the financial sector's centrality for economic performance, infrastructural power nevertheless

constitutes a distinct sub-type derived from direct entanglement at the level of policy *instruments* rather than the indirect dependence at the level of ultimate policy goals.

Michael Mann, in order to distinguish bureaucratic-democratic states from their absolutist predecessors, which relied on ‘despotic power’, has defined ‘infrastructural power’ as the ‘capacity of the state to [...] penetrate civil society, and to implement logistically political decisions’ (Mann, 1984: 189). Mann and others have since pointed out that in contemporary societies these two spheres penetrate each other to the point where the organisational boundaries of the state are no longer clearly delimited (Mann, 1993: 61; cf. Konings, 2011: 5). Under these conditions, infrastructural power becomes ‘a two-way street’ that not only strengthens control *by* the state but also allows for better control *of* the state by civil society actors (Mann, 1993: 59). In other words, the flipside of the infrastructural power of the state is the infrastructural power of those parts of the private sector that serve as the conduits for state agency. This second dimension – the power of non-state actors over state actors – is at the heart of the present article.

Accounting for this underappreciated source of financial-sector power adds real analytical value. While instrumental and structural power approaches can often explain financial-sector influence on the state, interest divergence *within* the state – or within the supranational apparatus of EU policymaking – is another matter. Why should financial technocrats at the Commission and at the ECB systematically diverge on certain issues? The concept of private-sector infrastructural power offers a theoretically parsimonious explanation. By accounting for differences in governance *methods*, it captures a causal mechanism that escapes even the structural power approach. According to the latter, policymakers placate business interests for fear that not doing so would harm economic growth. By contrast, infrastructural power operates via policymakers’ expectation that harming particular markets would blunt their own policy instruments and thus diminish their control over the economy. The European Commission and the ECB may be working towards complementary and compatible goals, but they do so by *different methods*: the Commission governs by issuing directives and regulations, the ECB by issuing liabilities and purchasing securities.

Finally, the infrastructural power approach complements ‘ideational’ and ‘bureaucratic politics’ explanations of policymaking and institutional preference formation. First, a growing literature demonstrates the importance of ideas and expert knowledge in economic and financial policymaking (Hirschman and Berman, 2014; Ban et al., 2016) and, by implication, in the operation of structural business power (Bell and Hindmoor, 2015; Hopkin and Shaw, 2016). Here, the notions of infrastructural entanglement and power enable a more nuanced assessment of the role of ideas. On one hand, the ECB’s support for repo and securitisation markets is underpinned by a rational expectations–based macroeconomic paradigm that implies a positive net effect of deep and liquid financial markets on economic performance and governability (Braun, 2014, p. 69). However, governability concerns can take precedence over ideological commitments. For instance, the ECB’s interventionist loan-data transparency initiatives – for asset-backed securities (see section 5 below), for individual loans (‘AnaCredit’) and for non-performing loans (Mersch, 2017) – seek to alter market practices, at a cost to market actors, for the purpose of enhancing governability. The ideational balancing acts associated with infrastructural entanglement offer a promising avenue for future research.

A second relevant theory emphasises ‘bureaucratic politics’. Thus, Jacobs and King (2016) have argued that central bankers protect finance in order to bolster their own institutional position and independence. Here, too, the concepts of infrastructural entanglement and power offer greater analytical specificity by defining the interests of central bankers more narrowly as geared towards ensuring the effectiveness of the monetary policy instruments. In most situations, the two motivations would guide central bankers to the same course of action. However, whereas Jacobs and King expect the Fed *always* to side with finance (within Congressional constraints), the infrastructural power approach yields a more bespoke hypothesis: the interests of actors in specific financial markets align with the interests – understood as maximising steering capacity – of technocrats who are mandated (or have

chosen) to govern through those markets. Inversely, the infrastructural power hypothesis would predict that central banks are less likely to protect financial markets that are not essential to monetary policy, such as derivatives markets. Where central banks take on responsibilities beyond monetary policy – such as banking supervision or macroprudential regulation – their infrastructural dependencies should be expected to increase.

In sum, the purpose of introducing infrastructural power as a distinct sub-type of structural power is to harness differences in governance methods as an explanatory resource. The analytical dividend is 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.

4. The ECB, the repo market and the financial transaction tax

Implementing monetary policy through ‘indirect’ instruments – most notably, open market operations – poses two main challenges for monetary policy implementation. In the euro area, the first challenge – forecasting the amount of reserves the central bank must inject into the interbank market in order to align the market interest rate with its target rate – became irrelevant when, in October 2008, the ECB began to provide unlimited reserves under its ‘fixed-rate full allotment policy’. Second, the central bank needs to devise financial instruments to inject (and absorb) these reserves in sufficient quantities and without distorting (too much) private money markets. Crucially, while central banks choose instruments on the basis of existing financial market conditions, their structural position as the monopoly suppliers of reserves means that these choices are themselves major drivers of financial market development (Gabor, 2016b, pp. 974–82).

While there was still considerable instrument diversity in the 1990s, by 1997 most EMU central banks had converged on reverse repurchase transactions as their primary reserve-providing instrument (Borio, 1997, p. 40), thus paving the way for them to become the standard instrument for all open market operations of the Eurosystem (that is, the ECB and the national central banks). A sale and repurchase agreement, or repo, consists of an exchange of cash for securities between two parties. The cash borrower (‘repo seller’) agrees to repurchase the securities from the cash lender (‘repo buyer’) at a specified date in the future. Interest is paid by the cash borrower in the form of a mark-up on the repurchase price, the repo rate. Repo markets are at the heart of the global shadow banking system. In addition to the interbank segment, repo markets also connect banks in search of short-term funding and non-bank institutions seeking safe and liquid, money-like assets (Hardie *et al.*, 2013a, p. 715). Following the crisis, repo markets came under scrutiny for their effects on pro-cyclicality and leverage in the banking system, as well as on the bank–sovereign nexus (Gabor and Ban, 2016; Gabor, 2016b). There are currently \$12 trillion of repo and reverse repo transactions outstanding globally, of which about \$9 trillion are collateralised by government bonds. At \$2.8 trillion, the euro-area repo market is the world’s largest (CGFS, 2017).

4.1 Building the infrastructure: integrating and standardising interbank repos

As late as 1996, the Bundesbank opposed deregulating the *private* German repo market on the grounds that liberalisation would undermine the control it exerted on interbank liquidity conditions via its own repo transactions (Gabor, 2016b, p. 977). Increasingly, however, central bankers preparing for the euro rallied around a radically different view. In the late 1990s, several high-level repo market studies identified the transnational integration of the European collateralised interbank market as a crucial prerequisite for the single monetary policy. Most importantly, the Giovannini Group, which reported to the European Commission, bemoaned the fact that Europe still had ‘essentially 15 separate repo markets’ and argued that a ‘truly unified repo market’ would facilitate central bank control over interbank rates (Giovannini, 1999: 2, 8). A study commissioned by DG Economic and Financial Affairs also emphasised that it would be ‘in the interest of the central bank to have an efficient repo market’, which would enable ‘interest rate changes [to] feed through to the

real economy more quickly and more evenly' (Stadler and Lannoo, 2000: 12). Finally, a working group of leading central banks published its own survey of the interaction of monetary policy and repo markets in the G10 countries. The report emphasised central banks' key role 'in the promotion and development of repo markets' and predicted a growing European repo market as a result of its centrality in the operational framework of the nascent Eurosystem (Bank for International Settlements, 1999: 14).

Nevertheless, when the Eurosystem began its operations in January 1999, interbank money markets were not transnationally integrated and in some countries, such as Ireland and Finland, 'there was no money market' at all – 'this segment was missing' (Interview 2). Aiming at improving the financial infrastructure for monetary policy implementation, the ECB used its operational framework strategically to foster 'unification and standardisation' in the interbank money market (Santillan *et al.*, 2000: 7). Although all banks subject to the reserve requirement had access to the Eurosystem's refinancing operations, only the larger ones – roughly 10 per cent, or 700 to 800 banks in mid-2000 – participated directly (ECB, 2000c: 42). The remaining 90 per cent of banks satisfied their liquidity needs in the interbank market, which acted as 'a redistributor of central bank liquidity' (Interview 3). The 'home bias' that initially characterised the German money market was quickly eliminated (Interview 4) and banks in countries with previous repo experience soon 'acted as liquidity providers for the banks of other countries' (Interview 2), thus spurring 'a significant increase in [private] cross-border transactions in the euro money market' (Santillan *et al.*, 2000: 12–13). In short, 'increasing collateralisation in private wholesale markets' and 'relatively high consumption of collateral by the Eurosystem' reinforced each other (ECB, 2006: 76), increasing the infrastructural entanglement between market-based banking and market-based central banking.

The Eurosystem also fostered market integration by acting as a standard-setter. The two main types of repo contracts are special repos, with specific securities as collateral, and general collateral (GC) repos, in which any securities from a defined class of securities can serve as collateral. By paving the way for GC baskets consisting of euro-area government bonds, the ECB set an important standard in the repo market. Again, the ECB's actions were motivated by considerations related to monetary policy implementation. While the collateral framework did not discriminate between bonds issued by different national governments *de jure*, the haircuts it imposed on a mark-to-market basis depended on current market valuations (ECB, 2000b, p. 43). Realising that this *de facto* discrimination stood in the way of further market integration, the ECB argued that integration 'would benefit from the extension of a euro GC approach' that would put all government bonds in the same collateral basket (ECB, 2002, p. 66, quoted in Gabor and Ban, 2016, p. 626). GC baskets for standardised repo contracts became market practice when the two leading central counterparty firms introduced them in 2005 (Eurex) and 2007 (LCH Clearnet), respectively (Gabor and Ban, 2016, p. 626). After that, GC repos saw rapid growth – between 2008 and 2013, the volume of outstanding Eurex GC repos rose from €22 billion to €165 billion (Bundesbank, 2013, p. 65).

4.2 Infrastructural power and the financial transaction tax

In the aftermath of the global financial crisis, the idea of a financial transaction tax (FTT) gained traction among European policymakers. With the support of the largest member states, including France and Germany, the Commission's DG TAXUD set out to draft an ambitious proposal. The financial transaction tax tested the infrastructural alliance between the ECB and the repo market; that is, the large European banks as well as institutional investors and asset managers.

After its September 2011 FTT proposal failed to find unanimous support in the ECOFIN Council in 2012, the Commission, then supported by eleven (today: ten) member states, introduced a largely unaltered draft directive under the 'enhanced cooperation' procedure in early 2013 (Kalaitzake, 2017, p. 5). That proposal listed repos among the financial instruments that would be taxed at a rate of 0.1 per cent. It is important to note that, according to

financial-sector lobbyists, the Commission had effectively shut them out while drafting this aggressive proposal (Kastner, 2017, p. 9). Subsequently, however, the political climate shifted. By the end of 2016, the 'EU-10' finance ministers had agreed to exempt repos, along with other types of transactions, from the FTT proposal (ECOFIN, 2016, p. 6). The ECB's sustained opposition to the financial transaction tax played a central part in this watering down of the Commission's original proposal.

France and Germany had initially advocated taxing repos on the grounds that they facilitated – at that time highly unpopular – short-selling practices. The Commission linked the inclusion of repos to a broader argument about financial stability, citing research on the potentially destabilising consequences of excessive, pro-cyclical liquidity creation enabled by the repo market (Gabor, 2016a, p. 934–36). Once the proposal had reached the Council, however, financial stability considerations receded into the background. Instead, two other public actors voiced concerns that stemmed from their infrastructural entanglements with the repo market. On one hand, in a separate manifestation of infrastructural power, finance ministries worried about the impact of a repo tax on the liquidity of government bond markets, and ultimately on government borrowing costs. However, given that it was these same finance ministries that had supported a comprehensive financial transaction tax in the first place, the decisive actor – a policymaker in all but name – was the ECB. Directly countering the Commission's concerns over excessive liquidity, the ECB insisted on the beneficial effects of liquidity for overall market efficiency and warned of the potential 'negative implications for the implementation of monetary policy' (ECB, 2013c, p. 109).

Showing that infrastructural power was at play requires demonstrating that the ECB's opposition to the financial transaction tax was motivated by concerns over the impact of a repo tax on the implementation and transmission of monetary policy. To be clear, this argument was actively pushed by repo market actors, namely large European banks, investment firms and their main lobbying organisations (Gabor, 2016a, pp. 936–39; Kalaitzake, 2017, pp. 8–12). The Association for Financial Markets in Europe (AFME) commissioned a report from Oliver Wyman, the consultancy, which rang the alarm over repo market liquidity and the 'potential damage to the functioning of monetary policy' (Oliver Wyman, 2013, p. 11). Similar warnings were voiced in an FTT report published by the European Repo Council (2013). However, the ECB did not *need* to be convinced, since it had not supported the FTT idea in the first place. Jean-Claude Trichet had expressed opposition to the financial transaction tax even before the Commission's 2011 proposal, questioning whether it would be 'the right thing to do to put sand in the machine' (Pignal, 2011). This pre-existing opposition – or at the very least, strong scepticism – meant that financial market actors did not have to lobby the ECB very hard at all. In fact, the ECB reached out on its own initiative via its 'contact groups' for bond, foreign exchange and money markets. These little-known groups meet on ECB premises on a quarterly basis; each group is chaired by senior DG Market Operations officials and comprises around 20 financial-sector professionals. The meeting summaries show that each group received the same presentation from an ECB official, detailing the specifications and comprehensive scope of the FTT proposal (ECB, 2013a). While these presentation documents do not, of course, openly state opposition, there is a telling absence of any hint at ECB endorsement of the financial transaction tax. In short, Trichet's public opposition to and the ECB's private non-endorsement of the FTT, first communicated to the Money Market Contact Group in March 2013, provide support for Kalaitzake's (2017, p. 11) assessment that when the financial sector launched its attack on the financial transaction tax later that spring, it was 'pushing against an open door' in Frankfurt (Kalaitzake, 2017, p. 11).

In mid-2013, several ECB Executive Board members and national central bank governors publicly voiced opposition to the FTT proposal, arguing that the tax would reduce repo market activity, hamper the efficient distribution of central bank liquidity throughout the euro area and therefore have 'possible negative implications for the implementation of monetary policy' (Mersch 2013a; Kalaitzake, 2017, p. 11). More importantly, ECB representatives also communicated their opposition at a meeting of the Council and in two meetings with the

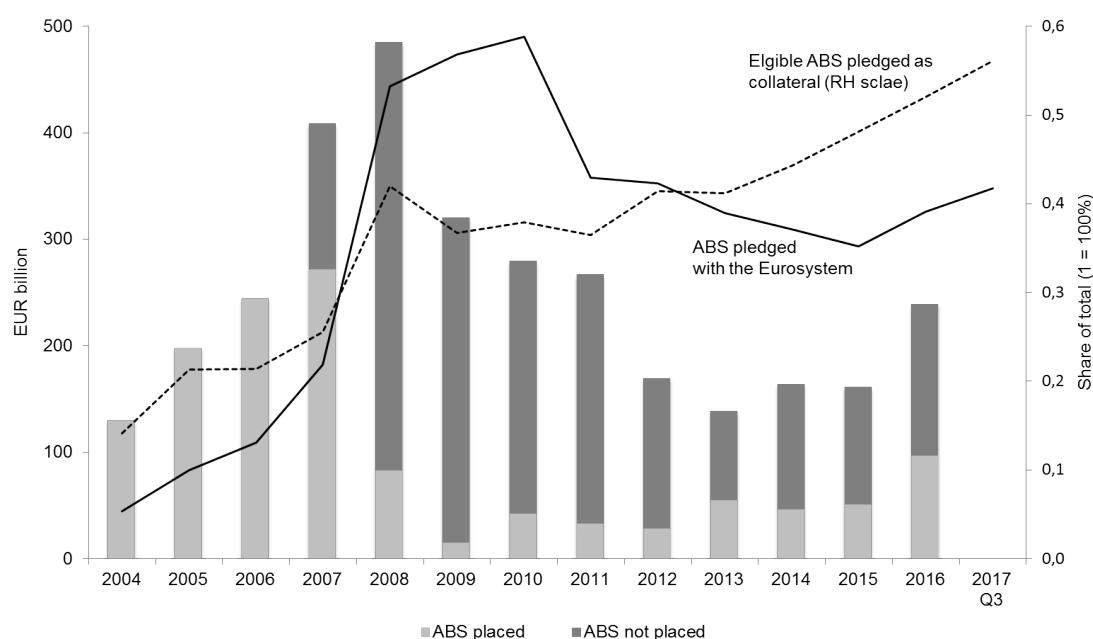
Commission. In those meetings, the Commission offered time adjustments for repos in order to address the ECB's concern that a tax would make this short-maturity business unviable (Interview 14). The outcome, however, was not so much a compromise but a resounding victory for the ECB-repo alliance. By the end of 2016, 'EU-10' finance ministers had agreed to exempt repo transactions, alongside other money market instruments, bonds and derivatives linked to government bonds, from the tax (ECOFIN, 2016, p. 6). At the time of writing (September 2017), the Council had yet to approve this watered-down FTT proposal.

Starting in 2010, the Commission, then supported by the largest member states, advocated taxing repos on the grounds that the market contributed to excessive and pro-cyclical leverage and thus to financial instability. The ECB, by contrast, opposed the financial transaction tax on the grounds that a tax on repos would harm the market that served as the conduit for the implementation and transmission of its open market operations. The rift between the two agencies was thus not based on a fundamental divergence on policy goals, but on the dependence of the ECB's market-based policy *instruments* on a deep and liquid repo market. While definite proof remains elusive, this section has presented evidence from a wide range of sources that shows that infrastructural entanglement and power can explain why the repo lobby found itself shut out in Brussels but pushed against an open door in Frankfurt. The empirical material is more plentiful in the case of securitisation.

5. The ECB and the quest for 'simple, transparent and standardised' securitisation

Securitisation is the process of creating asset-backed securities (ABSs). The value and interest payments of an ABS are based on and collateralised by a pool of underlying loans – residential or commercial mortgages, as well as loans to firms and consumers. To create an ABS, a bank originates loans, bundles them together and sells them to a special purpose vehicle (SPV). The SPV is constructed as a legally separate entity, thus ensuring its bankruptcy remoteness in case of insolvency of the originating bank. The SPV finances the purchase of the loan pool by issuing (asset-backed) securities, sliced into tranches of different seniority (Gorton and Metrick, 2012, p. 430). Although the European securitisation market never reached the scale of its US counterpart, it grew rapidly following the introduction of the euro, from €78.2 billion in 2000 to €453.7 billion in 2007 (Hardie *et al.*, 2013a: 712, numbers include the UK). Prior to the US subprime crisis, central bankers and regulators praised securitisation as a tool for risk diversification. By contrast, after the crisis securitisation was seen as riddled with asymmetric information and moral hazard problems, and was linked to excessive lending, fraudulent mis-selling, and financial instability (Financial Crisis Inquiry Commission, 2011). Regardless of the normative assessment, securitisation reorganises risks and incentives in ways that represent 'a fundamental shift in how finance is done' (Davis and Kim, 2015, p. 208).

Figure 1. Issuance and use in Eurosystem refinancing operations of euro-denominated ABS



Note: The share of ABS not placed in 2004–2007 was negligible (ECB, 2013b, p. 78); exact data could not be obtained. Sources: European Securitisation Forum (data on ABS issued 2004–2007); SIFMA (data on ABS issued, placed and retained, 2007–2017); ECB (data on ABS eligible and ABS pledged as Eurosystem collateral); author's calculations.

The infrastructural entanglement between the ECB and the securitisation market is rooted in the ECB's decision to integrate ABSs into its collateral-eligibility framework (ECB 2000b, p. 39). More recently, in the wake of the failure of Lehman Brothers, the ECB assumed the role of 'dealer of last resort' for ABSs (cf. Mehrling, 2010). By taking suddenly-illiquid ABSs onto its balance sheet, the ECB gained leverage over the securitisation market, while at the same time becoming more dependent on it. This infrastructural entanglement led the ECB to support securitisation at a time when this asset class was still shunned by investors and politicians alike, thus paving the way for its subsequent resuscitation, the Juncker Commission's embrace of securitisation as a key pillar of its Capital Markets Union project and, ultimately, the STS ('simple, transparent and standardised') regulation of 2017.

5.1 (Re-)building the infrastructure: The ABS loan-level initiative (2008–2012)

In 2007–2008, euro-area banks went from selling ('placing') virtually all the ABS they issued to retaining more than €500 billion (black columns in Figure 1). Banks did not hold on to those securities, however, but pledged them as collateral to obtain reserves from the ECB, which accepted ABSs down to a minimum credit rating of A–. As a result, the total value of ABSs pledged with the Eurosystem increased by a factor of five, reaching almost €500 billion in 2010 (solid line in Figure 1). As the head of the ECB's Risk Strategy Division put it, '[a] vibrant market with many ABS buyers and sellers gave way to a situation in which the only absorber of new and old ABS was the ECB' (Gonzalez, 2014, p. 32). The ECB had little choice but to put a floor under the ABS market. Prohibiting banks from using securitisation to generate Eurosystem-eligible collateral would have put upward pressure on interbank interest rates at a moment when the ECB sought to ease monetary policy.

The ECB's decision to seek an overhaul of the infrastructure of the European securitisation market can be traced to a particular event: the bankruptcy of Lehman Brothers, whose German subsidiary had pledged EUR 8.5 billion of (mostly ABS) collateral with the Eurosystem (Interview 5; Dombret, 2013). The ECB suddenly faced two risk management challenges. First, the lack of data on the quality of the underlying loans left the ECB unable to determine the value of the ABSs it had taken onto its balance sheet (Interview 5; Mersch,

2017).² The second concern was market liquidity. Since counterparty defaults – that of Lehman, but potentially others – forced the ECB to take ownership of and subsequently to sell significant volumes of ABSs, it had a strong interest in having a liquid market for these securities (Gonzalez, 2014: 32). These risk management considerations prompted the ECB to launch its ambitious ‘ABS loan-level initiative’.

The initiative was an unprecedented effort to get issuers of ABSs to provide and regularly update information on each underlying loan, as well as to create the IT infrastructure to make this data available to investors and, crucially, to the ECB. Notwithstanding the ECB’s positive summary of the responses to its December 2009 public consultation (ECB, 2010: 1), ABS issuers opposed the idea of a loan-level information requirement on the grounds of confidentiality and cost considerations (Interviews 6 and 7). The ECB put together six technical working groups, one for each ABS sector.³ The groups, consisting of an ECB chair and up to 15 securitisation market participants, devised templates that defined which information on the underlying loans ABS issuers would have to provide. The ECB phased in the reporting requirements for collateral-eligible ABSs between January 2013 and April 2014. At the heart of this new informational architecture stood the *European DataWarehouse* (ED). Established in 2012 as a private company in Frankfurt, the ED is owned by a shareholder consortium of 17 financial sector firms. The ECB and national central banks hold observer status on both the supervisory board and the pricing committee (Interview 8).

Although it represents a show of strength on the part of the ECB, the ABS loan-level initiative is also consistent with the hypothesis of a positive net effect of infrastructural entanglement on financial-sector power. The ECB was able to implement the initiative against ‘very strong pushback’ from market actors (Interview 5) because banks depended heavily on the collateral-eligibility of ABSs, which at the time accounted for 24 per cent of the assets pledged in transactions with the Eurosystem, the largest share of any asset class (ECB, 2011, p. 6; Ossa, 2012, p. 15; Interview 6). However, the ABS loan-level initiative did *not* represent a ‘defeat’ for the financial sector. The ECB itself diagnosed a ‘coordination problem’ that prevented market actors from building a more efficient market infrastructure, creating the need for the ECB to step in as a ‘catalyst’ for change (Mersch, 2017). Even without the assumption of myopic market actors it is possible to view the ABS loan-level initiative as a mild concession to the ECB at a moment when the European (shadow) banking system depended on central bank support for survival. The next section details the breadth and scope of this support, which came in the form of three types of ‘easing’.

5.2 Infrastructural power and securitisation: collateral, quantitative and regulatory easing (2012–2017)

After Mario Draghi’s ‘whatever it takes’ speech had calmed sovereign debt markets in the summer of 2012, the ECB’s primary concern was that ‘financial fragmentation’ and ‘heterogeneous’ credit conditions for non-financial firms continued to prevent the ‘homogeneous pass-through of its key interest rates’ across the euro area (ECB, 2012d, p. 63). Identifying securitisation as a means to ‘restore the impaired monetary policy transmission mechanism’ (Cœuré, 2012), the ECB provided support to the ABS market through collateral, quantitative and (advocacy for) regulatory easing.

The first mechanism was collateral easing. The ECB has advocated a liquid ABS market because securitisation generates securities that can serve as collateral, allowing banks to refinance via the repo market. Freeing up bank balance sheets by securitising and selling off loans to (foreign) investors also has beneficial effects for monetary policy transmission (ECB and Bank of England, 2014; Mersch, 2014). In addition to this private refinancing

² Pre-crisis transparency had been higher in the US, where loan-level data for non-agency mortgage-backed securities was collected and supplied by private firms (Ossa, 2012: 12).

³ The six sectors were: residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), small and medium-sized enterprise (SME) loan securitisations, auto loan ABSs, consumer finance ABSs and leasing ABSs.

mechanism, securitisation also generates Eurosystem-eligible collateral. By acting as the dealer of last resort for ABSs, the ECB – in its own words – encouraged banks to switch their securitisation business model ‘from the “originate-to-distribute” model up to the summer of 2007 to some form of “originate-to-repo” model’, thus providing ‘great support to this market segment’ (González-Páramo, 2010). When the sovereign debt crisis put banks under renewed stress, three ECB decisions between December 2011 and July 2014 lowered the rating threshold for ABSs from AAA to BBB– (Wolff, 2014, p. 5). This collateral easing allowed the ECB to absorb almost €500 billion of ABSs in 2010 (solid line in Figure 1). Subsequently, the share of eligible ABSs pledged with the Eurosystem increased even while the total amount of ABS collateral fell, reaching 50 per cent in 2015 (dotted line in Figure 1). At the inaugural meeting of the Bond Market Contact Group, an ECB representative explained that this collateral easing for ABSs was part of a strategy of targeting ‘those assets that were deemed to be more effective for fostering bank lending’ (ECB, 2013d, p. 2). As shown in the previous section, the ECB’s commitment to continue the provision of central bank liquidity against ABS collateral was predicated on financial-sector compliance with the loan-level initiative.

Second, the ECB supported the securitisation market through quantitative easing (QE). In June 2014, Mario Draghi announced the Asset-Backed Securities Purchase Programme (ABSPP) as a measure ‘to enhance the functioning of the monetary policy transmission mechanism’ (Draghi, 2014). Here, too, loan-level data, although not initially pursued by the ECB with QE in mind, was a necessary condition: ‘Without the loan-level data information we would probably not have an ABS programme in the first place’ (Interview 5). Unlike covered and corporate bonds – which are concentrated in the core countries and issued by large banks and corporations – ABSs held the promise of asset purchases targeted to ailing sectors in the vulnerable countries. However, although it would have prioritised intervening in this market, the ECB was well aware already in 2013 that the shrunken ABS market was too small for asset purchases to have a meaningful effect on aggregate economic activity (Interview 3).⁴ Instead, the stated objective for the ABSPP was to support the ECB’s broader efforts to revive securitisation in the euro area by sending ‘a signal from the ECB to markets of its belief that this asset class is an important and sound one’ (Bindseil, 2015, p. 16).

Third, and most important, the ECB pushed for the revival of the securitisation market in Europe by advocating ‘regulatory easing’. In late 2013, the ECB Executive Board member in charge of market operations and policy implementation warned of the ‘potentially uneven and disproportionate treatment of ABS in forthcoming regulations’ (Mersch, 2013b). In June 2014, Mario Draghi followed up with an appeal to regulators to revisit their treatment of ABSs in order to ‘eliminate some of the undue discriminations towards this specific product when this product is simple, real and transparent’ (Draghi, 2014; cf. Mersch, 2014). These statements referred to the then-circulating Commission proposals for a Solvency II Directive and a new Capital Requirements Directive, which prescribed high capital charges on ABSs held by insurers and banks, respectively (ECB and Bank of England, 2014, p. 3).

Collateral, quantitative and regulatory easing – no other public agency has done more for the European securitisation market than the ECB. To see why *instrumental power* cannot explain this steadfast support, timing is, again, crucial. The ECB cast securitisation as part of the solution at a time when other European and national policymakers still regarded it as part of the problem. In fact, when an ECB Executive Board member asked a group of securitisation professionals, ‘how do we bring back investors to the securitisation markets?’ (González-Páramo, 2010), he did so at a time when securitisation was stigmatised even among investors. In late 2014, one market participant expressed relief ‘that the ECB leads ABS out of its dodgy corner’ while ‘the regulator is still convinced that it all is somehow a devilish thing’ (Interview 6). At the same time, the divergence between the ECB and the Commission is difficult to square with the *structural power* approach, which lacks a theoretical rationale for why different parts of the EU governance apparatus should hold such different views of the effects of a more tightly regulated securitisation market on the shared policy goals of financial

⁴ By the end of October 2017, the ECB held securities worth EUR 25.4 billion under the ABSPP, compared with EUR 1,849 billion under the Public Sector Purchase Programme.

stability and economic growth. By contrast, the market-based nature of central bank agency, and the resulting infrastructural entanglement at the level of policy instruments, explain why the interests of the ECB were uniquely aligned with those of the securitisation sector.

This leaves the question of whether the ECB's support has, from a financial-sector perspective, yielded tangible results. In the absence of a counterfactual scenario, the most striking piece of indicative evidence is the genealogy of the notion of 'simple, transparent and standardised securitisation' (STS), now enshrined in EU law (Council of the EU, 2017). To the author's best knowledge, the first time a high-level European policymaker used this terminology was in June 2010, when an ECB Executive Board member told a securitisation industry conference in London that the ECB's loan-level data initiative 'would become an important building block along the path towards *standardisation*, *simpler* structures and better post-trade price *transparency*' (González-Páramo, 2010, author's emphasis). Over the following years, the ECB consistently described its own role in the securitisation standard-setting process – which had been sparked by the ECB's loan-level data initiative – as 'leading or acting as a catalyst' (Cœuré, 2012; cf. Mersch, 2017). In that particular speech, Benoît Cœuré used the phrase to describe the ECB's role with regard to 'Prime Collateralised Securities', an industry-led standard-setting initiative that developed and awarded a 'label for high quality securitisations which meet best practice in terms of quality, *transparency*, *simplicity*, and *standardisation*' (PCS, 2012, author's emphasis). In 2013, Yves Mersch (2013b), highlighting regulatory agreement on 'principles for high quality ABSs' as a scenario for a 'quick win', pointed out that the ECB's collateral eligibility criteria for ABSs 'could serve as a starting point for such discussion'. After the Commission (2013, pp. 12, 17) had merely paid lip service to securitisation in its early-2013 *Green Paper on Long-Term Financing*, in December that year it asked the European Banking Authority for advice on 'promoting a safe and stable securitisation market' (EBA, 2013). Subsequently, STS securitisation, invented by central bankers, garnered broader political support and became a key pillar of 'Capital Markets Union', the flagship project of the European Commission (Braun and Hübner, 2017; Engelen and Glasmacher, forthcoming). When, after protracted negotiations, the Parliament and the Council reached agreement on the STS proposal in May 2017, Yves Mersch (2017) was quick to claim credit for the ECB's loan-level initiative and the 'important contribution' it had made early on in the process.

To summarise, the securitisation case is consistent with the hypothesis of a positive net effect of infrastructural entanglement on financial-sector power. The ECB's loan-level data initiative shows that infrastructural entanglement can strengthen the will and capacity of governmental actors to intervene against the stated preferences of the private sector; namely, when the effectiveness of policy instruments is at stake. The theoretical argument transcends the case of the ECB: In areas such as monetary policy, debt management or public banking, policy instruments are market-based, and governmental actors seeking to 'govern through financial markets' have a vested interest in shoring up and stabilising the relevant market/governance infrastructures (Braun et al., forthcoming).

6. Conclusion

One of the central questions for political economists in recent years has been why and how finance tends to win. The post-crisis resilience of market-based banking in the euro area represents a significant victory for the financial sector because repo and securitisation markets boost profits via higher leverage and income from fees. In order to explain that victory, this article adapted the concept of infrastructural power for studying the politics of finance. It showed that, in the two cases under consideration, the political power of repo and securitisation market actors derives from their infrastructural entanglement with the European Central Bank. Infrastructural power constitutes a sub-type of structural power that focuses on differences in governance methods, namely between administrative governance and market-based governance. Whereas structural power operates via policymakers' expectation that harming business will harm economic performance, infrastructural power

operates via policymakers' expectation that curtailing markets will curtail the effectiveness of their own, market-based policy instruments.

There is an important historical dimension to this argument. While infrastructural entanglement is inevitable at the hybrid core of capitalist financial systems, where private banking and public central banking co-evolve, entanglement has increased in recent decades. In the post-war configuration of deposit-based banking and *lender-of-last-resort* central banking, European central banks regarded relationship-based banking (and strong social partners) as pillars of monetary governability. Since the 1980s, however, financialisation and a turn towards more market-based monetary policy instruments have brought about a new co-evolutionary equilibrium between market-based banking and *dealer-of-last-resort* central banking.

Under these historically specific conditions, the concept of infrastructural power enables a more fine-grained analysis of financial policymaking. In the case at hand, it casts a spotlight on the ECB as a *de facto* financial policy-maker; a role that is not, except in supervisory matters, part of its legal mandate (Braun, 2017). The ECB has helped establish, expand, protect and revive repo and securitisation markets, which serve as infrastructure for the implementation and transmission of monetary policy. Market-based agency and infrastructural entanglement offer a parsimonious explanation of why the ECB opposed the Commission's financial stability-oriented proposal for a tax on repo, and why it advocated regulatory easing for securitisation at a time when other policymakers still considered the ABS market toxic. In both cases, the preference for deep and liquid financial markets, shared by bankers (guided by profits) and central bankers (guided by monetary governability), prevailed. The present proposal for a financial transaction tax exempts repo transactions, while 'simple, transparent, and standardised' securitisation is a key pillar of the Commission's Capital Markets Union project, which aims at engineering a more market-based European financial system. If elsewhere 'it takes a village to maintain a dangerous financial system' (Admati, 2017), in the EU it takes two: in the two cases examined here, financial-sector interests were shut out or unheard in Brussels, but could count on steadfast support in Frankfurt.

The purpose of this article is to open up a new theoretical perspective on financial sector power at a time when market-based economic governance and infrastructural entanglement are undergoing rapid diffusion, both across the globe and into new policy areas. A growing literature is documenting this trend in the area of fiscal policy, where treasuries have embraced increasingly market-based sovereign debt management practices (Lagna, 2016; Livne and Yonay, 2016; Fastenrath et al., 2017). In the area of central banking, the ECB continues to be an innovator. It has partly nationalised the settlement of securities trades via TARGET2-Securities (Krarup, 2016), engages in securities lending to ease collateral scarcity (ECB, 2017) and is pushing for a new data infrastructure for non-performing loans (Mersch, 2017). In the US, infrastructural entanglement was at the heart of the Fed's discretionary decisions during the financial crisis to backstop certain forms of private, money-like liabilities created in the shadow-banking system (Murau, 2017). In Japan, the central bank has moved beyond bond purchases to buy exchange-traded fund shares and is now the country's largest equities investor (Lewis and Colback, 2017), while aggressive equity investments by a broader array of public entities have created a 'shareholder state' (Wang, 2015). The notion of harnessing capital markets for public policy goals has also been at the heart of Capital Markets Union, which deploys a broad set of measures to engineer a more-market-based financial system. Deprived of fiscal and other macroeconomic policy instruments, the European Commission, supported by the ECB and by public development banks, sees Capital Markets Union as a means to harness private financial markets in order to achieve macroeconomic goals (Braun and Hübner, 2017; Hübner, forthcoming; Mertens and Thiemann, forthcoming).

The infrastructural power approach predicts that, under conditions of infrastructural entanglement, the interests of state actors in search of market-based economic steering capacity will tend to align with the interests of financial-sector counterparties, thus boosting

the latter's political power. It will be a task for future research to study the factors determining the effectiveness of these alliances, such as the salience of policy issues, the intra-governmental authority of governance bodies and their exposure to legitimacy claims by non-finance constituencies.

Finally, the notions of infrastructural entanglement and power raise normative questions regarding the 'paradox of state action in financialized economies'; namely, the simultaneous presence of 'extreme vulnerability and extraordinary repertoires for government action' (Woll, 2017, p. 205). On one hand, market-based governance and state-led financial innovation can improve state capacity. Indeed, grasping the extent to which 'private' financial markets are entangled with central banks and governments (and their liabilities) is a necessary first step towards envisioning a more equitable and democratic financial system (Block, 2014; Herzog 2017; Hockett and Omarova, 2017). Short of such transformative changes, however, the analysis in this article calls for caution. Other things being equal, greater reliance on market-based forms of state agency tends to strengthen the infrastructural power of finance. Working 'through financial markets' may limit the ability of public authorities 'to help Main Street, not Wall Street'.

Appendix 1: List of Interviews

1. ECB, 11 March 2013, Frankfurt.
2. ECB, 7 May 2013, Frankfurt.
3. ECB, 1 July 2013, Frankfurt.
4. Bundesbank, 5 September 2013, Frankfurt.
5. ECB, 1 December 2014, Frankfurt.
6. Head of Transaction Management, commercial bank, 2 December 2014, Frankfurt.
7. Managing Director, rating agency, 16 February 2015, Frankfurt.
8. European DataWarehouse, 16 February 2015, Frankfurt.
9. Kreditanstalt für Wiederaufbau, 16 February 2015, Frankfurt.
10. True Sale International GmbH, 30 April 2015, Frankfurt.
11. Director, commercial bank, 6 July 2015, London.
12. European Banking Authority, 6 July 2015, London.
13. Securities firm, 7 July 2015, London.
14. European Commission, 29 March 2017, Brussels.

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