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The Global Governance of Systemic Risk: How Measurement Practices Tame Macroprudential Politics

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ABSTRACT

This article explores how systemic risk has been governed at the international level after the financial crisis. While macroprudential ideas have been widely embraced, the policy instruments used to implement them have typically revolved more narrowly around the monitoring of risk posed by discrete ‘systemically important’ entities. This operational focus on individual entities sidelines the more radical implications of macroprudential theory regarding fallacies of composition, fundamental uncertainty and the public control of finance. We explain this tension using a performative understanding of risk as a socio-technical construction, and illustrate its underlying dynamics through case studies of systemic risk governance at the Financial Stability Board (FSB) and the International Monetary Fund (IMF or Fund). Drawing on official reports, consultation documents and archival sources, we argue that the FSB’s and IMF’s translations of systemic risk into a measurable and attributable object have undermined the transformative potential of the macroprudential agenda. The two cases illustrate how practices of quantification can make systemic risk seemingly more governable but ultimately more elusive.

KEYWORDS

Financial Stability Board; global governance; International Monetary Fund; macroprudential regulation; quantification; systemic risk

Introduction

The global financial crisis has reignited debates about the contemporary political and economic order. While a relative consensus has emerged on the continued pre-eminence of neoliberalism (Schmidt and Thatcher 2013, Kaya and Herrera 2015), the jury is still out on whether the crisis has reconfigured financial governance (Moschella and Tsingou 2013a, Helleiner 2014). In this realm, macroprudential ideas, which understand risk as a system-level property, have been on the rise. Proponents of macroprudential policies contend that microprudential supervision alone cannot guarantee financial stability because ‘systemic risk’ cannot be attributed to individual institutions (Crockett 2000, Clement 2010). Some advocate deeper institutional change to curb the power of finance, rather than simply mitigate its negative effects (Turner 2011, Lothian 2012). Macroprudential theory crystallised in the early 2000s, when economists at the Bank for International Settlements (BIS), an international organisation (IO) composed of national central banks, delineated new regulatory principles. After the crisis, their proposals informed new forms of regulatory thinking inside and outside the BIS (Baker 2013). Accordingly, recent scholarship has foregrounded the degree of macroprudential institutionalisation within individual polities (Goodhart 2015, Baker 2017, p. 4–6, Lombardi and Moschella 2017, Thiemann 2018).

While implementation has been underway at the domestic level, standards and guidelines for macroprudential policymaking have continued to be refined at the international level. Against this

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background, this article examines the post-crisis global governance of systemic risk through case studies of the Financial Stability Board (FSB) and the International Monetary Fund (IMF or Fund). Because of their mandates and regular reporting to the G20, these two IOs constitute 'most likely' actors for providing the systemic outlook on financial risk implied by macroprudential theory. Indeed, in response to the crisis, the G20 (2009, p. 17, 24) entrusted both organisations with additional surveillance responsibilities under the joint IMF-FSB Early Warning Exercise (EWE) and the G20 Data Gaps Initiative.

However, we argue that despite an increasing deployment of macroprudential terminology, the FSB and the IMF have operationalised systemic risk narrowly – that is, with little regard for the broader relationship between finance and society. This outcome stemmed chiefly from their efforts to quantify systemic risk and identify certain entities – financial institutions and markets, respectively – as discrete *loci* of this risk. The measurement practices at the FSB and the IMF thus exacerbate the dearth of 'social purpose' in implementations of otherwise progressive macroprudential ideas after the crisis (Baker 2018). Our analysis connects recent work on financial regulation with scholarship on the formative role of IOs in global governance: at a time when what 'macroprudential' means has yet to be settled (Haldane 2013), such highly influential IOs as the FSB and the IMF can establish dominant interpretations that narrow the scope for financial reform.

To develop this argument, we engage with the performativity literature, which originated in economic sociology, as well as science and technology studies. Performativity generally refers to the effects that descriptions exert on the social world. Political economy scholarship has employed the concept to illustrate, among other things, how economic theory helps to institute markets and sustain their most fundamental operations (MacKenzie and Millo 2003, MacKenzie 2006); how specific models legitimise some policies and delegitimise others (Braun 2014, 2016, Lockwood 2015, Heimberger and Kapeller 2017); and how financial crises are bred through valuation practices and rendered temporarily solvable through targeted but measured interventions (Langley 2010, 2015, Stellinga and Mügge 2017). Following Michel Callon (1998, p. 4), we take seriously '[t]he material reality of calculation', which suggests that social constructions interact with technical infrastructures. Discursive practices are insufficient to constitute risks as stable and, therefore, governable targets. A performativity lens complements constructivist accounts by underscoring how emerging macroprudential *ideas* have been tamed by microprudential risk measurement *practices*. If we looked solely at the discourses through which such ideas have been articulated in the two organisations after the crisis, we would be likely to overestimate the degree to which their practices have changed.

The article is organised into three sections. We first introduce a performative understanding of risk to clarify how the quantification of systemic risk conditions international regulatory standards, even while more progressive macroprudential ideas are espoused. We illustrate this dynamic in the second and third sections, which examine, respectively, the governance of systemic risk at the FSB and the IMF. Our analysis of official reports, consultation documents and archival sources reveals that the organisations' surveillance regimes are premised on a conception of systemic risk as a property of discrete entities. This entities-based approach focuses on risk concentrations in large financial institutions or sectors, which reproduces microprudential practices, albeit under the label of 'systemic risk'. Despite displaying openness to the macroprudential agenda, the FSB and the IMF have contained its transformative political potential through the conversion of systemic risk into something that is measurable and attributable. But because tensions, paradoxes and contingencies in this approach persist, we conclude that alternative visions of macroprudential politics can be recovered.

The Quantification of Systemic Risk

The global financial crisis has once more drawn attention to the impact of formative events on the salience of political ideas and the design of political institutions (Moschella 2010, Broome *et al.* 2012, Blyth 2013, Widmaier 2016). Social constructivists have been at the forefront of these

debates, stressing how new and old sets of ideas have clashed. Depending on the framing skills of leading political actors, constructions of an event as a 'crisis' can upend or entrench the status quo (Boin *et al.* 2009). At the current juncture, neoliberal policies still muster considerable political support (Mirowski 2013, Gamble 2014, Matthijs 2016), although 'bigger and deeper transformations' may still materialise from 'incremental changes' (Moschella and Tsingou 2013b, p. 3). One such long-term transformation could, for instance, originate from the recent electoral successes of a variety of communitarian movements with nationalist aspirations in many liberal democracies.

Much constructivist scholarship seeks to understand how ideas are channelled through sticky cognitive 'filters', especially after a crisis. These filters help actors to sort and interpret relevant information based on shared social norms (Abdelal *et al.* 2010, p. 10–1). This view proffers 'a cognitively routed kind of explanation that makes claims about how people interpret their situation' (Abdelal *et al.* 2010, p. 17). Without cognitive filters and institutional sensemaking practices, actors would fail to establish the meanings of materially new situations and to choose a corresponding behavioural path (Widmaier *et al.* 2007, p. 748). Constructivist IO scholars have mostly followed in these tracks by emphasising the capacity of international bureaucracies to disseminate and amplify influential ideas (for example, Park 2006, Broome and Seabrooke 2012, Béland and Orenstein 2013). According to this view, it is intersubjective agreement on meanings that gives a concept, such as systemic risk, its factual status and mediates its reception after a formative event. Constructivist accounts can be enriched through a performative understanding of systemic risk governance. At the most general level, social constructivists and performativity theorists share a discomfort with the rationalist casting of social reality as singular and objectively observable. Fundamentally, they agree that defining, measuring and regulating risk is never a process of pure discovery. Both groups instead see risk as a function of the social and material practices put in place to regulate it (de Goede 2004, p. 205, 2005, p. 81–4, Millo and MacKenzie 2009, p. 639, Best 2010, p. 35–6, Lockwood 2015, p. 730, Stellinga and Mügge 2017). Beyond this shared opposition to rationalism, however, social constructivist and performativity perspectives differ in notable ways.

While prevailing macroprudential discourses have been characterised by intellectual openness and political ambition, we show that the operational implementation in the FSB and the IMF has unfolded in much narrower terms. If only systemic risk is measured accurately, the underlying reasoning goes, it can be managed by regulators wielding adequate tools. But as research on the influence of material infrastructures suggests, certain objects can induce certain behavioural patterns (Latour 1992, Clegg *et al.* 2013, Austin 2017). Both organisations understand systemic risk as a quantifiable threat to the global financial system posed by entities that are deemed 'too big' or 'too interconnected' to fail. Their instruments define who or what is 'risky' in the first place, and how risky in comparison. Once that risk is measurable, it also becomes governable for the FSB and the IMF.

In this respect, systemic risk shares an important feature with the concepts and models that it came to challenge. While the containment of systemic risk had long been part and parcel of neoliberal governance techniques (Konings 2016), macroprudential ideas advanced swiftly and spread widely after the crisis, accompanied by elite discourses invoking financial market 'complexity' (Baker 2013, Datz 2013). Macroprudential ideas were formulated as corrections to the efficient market hypothesis and Value at Risk (VaR) models, on which the microprudential thrust of pre-crisis regulation had rested (Baker 2013, p. 116–7). Just as VaR models had brought into being certain types of financial markets, which justified new types of regulatory interventions (Lockwood 2015), measurements of systemic risk reconceptualised financial institutions and markets in a particular manner. As a result, new, though not necessarily more progressive, means to govern finance, especially regarding the scale of systemic risk, emerged as legitimate. Attempts to conform to changing norms even spurred largely symbolic institutional reforms in some of the world's largest financial markets (Lombardi and Moschella 2017).

From a macroprudential perspective, systemic risk is what emerges from a growing interconnectivity between financial institutions and markets. This view complicates widespread notions of where risk is located because banks or financial markets are not containers of risk but nodes in a

network of intersecting ties. Systemic risk constitutes less a property of certain institutions than a relational product; put differently, such risk travels through the ties, rather than residing in the nodes (Haldane 2009, p. 12). In their efforts to govern systemic risk, both the FSB and the IMF have sought to operationalise it through quantification. Many IOs design and diffuse various quantitative tools for evaluation, which offer (potentially misleading) informational shortcuts to governance action (Berten and Leisering 2017, Broome *et al.* 2018). In addition to representing it, metrics mould the social world as they sanction particular conceptualisations that, in turn, shape actors' behaviour (Espeland and Stevens 2008, p. 412–6, Hansen and Porter 2012). In contemporary global governance, risk has come to be understood as something that can be expressed in seemingly objective numbers, signalling growing trust in the calculability of the future (Hansen and Porter 2012, p. 416).

The FSB and the IMF 'enact' (see Mol 2002, p. vii) systemic risk in similar, though distinct, ways. As we show below, the most striking commonality is that both organisations render systemic risk measurable under an entities-based framework. The selected indicators quantify the level of systemic risk embodied by a particular entity, whether a financial institution (in the FSB's case) or a national financial market (in the IMF's case). An entity is considered 'risky' only if it meets the criteria used to determine risk levels; if its risk score is high, it counts as particularly risky. These surveillance regimes perform systemic risk as existing in the entities, not the anonymised system of global finance with its many 'intangible assets' (Bryan *et al.* 2017). This operationalisation, which is conditioned by material and technical considerations, has pushed each organisation towards a less holistic view of systemic risk than organisational discourses would suggest. Paradoxically, even though the organisations pride themselves on their capacity and mandate for global, system-wide surveillance (for example, IMF Archives 2013c, p. 37–8, FSB 2018a, 2018b), they ultimately operationalise systemic risk as a property of discrete entities. In sum, these entities are held to be the risk bearers as a function of their relationship to the global financial system, which itself appears risk-free. To better understand these dynamics, analysis needs to move beyond the discursive and ideational dynamics stressed in constructivist accounts.

The long-term success of enactments of systemic risk remains highly contingent. A number of tensions have emerged in the FSB's and IMF's quantified performances of systemic risk. These tensions resemble what Michel Callon (2010) calls the 'misfires' of performative action. Misfires can arise when the success of a performance depends on conditions that cannot be easily controlled by whoever carries it out, as is typical of attempts to ascertain the constitutive elements of the 'economy' (Callon 2010, p. 165). The macroprudential agenda raises the related question of who or what is risky, and to whom – that is, who or what meets a particular definition of 'systemic risk'. Specifically, efforts to govern systemic risk at the international level encounter a fundamental tension in the global governance architecture. While macroprudential theory emphasises the importance of monitoring risks across the financial system, the very organisation of the FSB and the IMF into members that enjoy rights and face duties as nation states thwarts this task. In contemporary economies, many activities pass through highly complex and integrated financial markets so that risky activities can take place anywhere and anytime. Under conditions of financialisation, systemic risk is difficult to locate in a fixed set of entities, which calls into question the viability of entity-based performances.

To foreshadow the claims developed below, the FSB and the IMF have enacted the concept of 'systemic risk', which is central to macroprudential theory, as entailing a microprudential concern with 'systemically important' entities. Such operationalisations of systemic risk as a feature of distinct entity classes can inspire unwarranted optimism about the long-term stability of financial markets. As Avinash Persaud (2010) warns, a regulatory focus on 'too big to fail' entities in non-crisis times obscures the potential magnitude of knock-on effects: 'In a crisis almost everyone is "too big to fail".' More generally, the occupation with seemingly technical matters, such as developing systemic risk metrics to identify and regulate certain entities, has also averted genuine political discussion of the social functions of financial markets (Baker 2018, p. 308–9). The next two sections specify how the FSB and the IMF have embedded macroprudential ideas into their post-crisis international financial surveillance regimes.

Governing Systemic Risk at the FSB

This section examines the evolution of the macroprudential governance framework at the FSB to highlight the practical tensions associated with performing systemic risk as the stable focal point of financial surveillance. In response to the financial crisis, the G20 replaced the Financial Stability Forum (FSF), launched in 1999 under the auspices of the BIS, with the FSB (Helleiner 2010), vesting the latter with a more expansive operating mandate (Moschella 2013). The FSB's *raison d'être* is to advance and help implement the G20 post-crisis financial reform agenda (FSB 2017). To assess the development of its systemic risk regime since the crisis, the case study draws on FSB reports, methodological documents and consultation papers. To outline central areas of controversy over the extension of the FSB's systemic risk approach to shadow banking entities, it also analyses 47 public responses to the 2015 consultation process on 'Non-Bank Non-Insurer Globally-Systemically Important Financial Institutions' (NBNI G-SIFIs). The responses came from a range of actors: banks, industry associations, think tanks and civil society organisations.¹

From its very beginnings, the FSB officially endorsed macroprudential ideas. Indeed, Article 2 of its Charter lists, as a first objective, to 'assess vulnerabilities affecting the global financial system as well as to identify and review, on a timely and ongoing basis *within a macroprudential perspective*, the regulatory, supervisory and related actions needed to address these vulnerabilities ...' (FSB 2018a, emphasis added). This orientation reflects the FSB's origins in the BIS, where macroprudential ideas rose to prominence. Moreover, when macroprudential regulation is discussed in official FSB documentation, it tends to be defined in an expansive and pluralist fashion. The term denotes a system-wide perspective, implying a fundamental critique of an entities-based perspective on risk regulation. A 2011 report co-authored with the IMF and the BIS describes macroprudential regulation along the following lines: '[T]he focus is on the financial system as a whole (including the interactions between the financial and real sectors) as opposed to individual components (that take the rest of the system as given)' (FSB *et al.* 2011, p. 4). The report also stresses the need to apply macroprudential instruments holistically by embedding them into fiscal and monetary institutions (FSB *et al.* 2011). Likewise, the FSB embraces analytical pluralism and institutional learning when discussing macroprudential policies within its country reviews (FSB 2013a, 2013b), which suggests considerable openness to critiques of the efficient market hypothesis underlying pre-crisis regulatory thought.

However, the FSB has delimited its own macroprudential activities in much narrower terms. Two features of its approach stand out. First, the FSB mobilises definitions of macroprudential regulation that frame it around 'systemic risk', a concept much more amenable to quantification than 'uncertainty' (Haldane 2009, p. 8–9, see also Knight 1964). For example, guidance published together with the IMF and the BIS states the curtailment of systemic risk as the core objective of macroprudential policy (IMF *et al.* 2016, p. 4). This view marks a significant departure from macroprudential thinking concerned with the uncertain, emergent properties of complex financial relationships (Haldane 2009). While some degree of Knightian uncertainty is acknowledged in relation to the possibility of any given firm failing, the effects of this failure can be calculated and predicted (BCBS 2013, p. 5, FSB and IOSCO 2015, p. 10). The FSB's regulatory competence in this area is hence grounded in the quantification of systemic risk.

Second, the management of systemic risk is achieved through the identification of a list of discrete entities – 'systemically important financial institutions' – where this measurable risk is concentrated. Following a call from G20 leaders at the 2009 Pittsburgh Summit, the FSB's macroprudential agenda was framed in terms of restoring market discipline in the face of pervasive moral hazards from anticipated bailouts with taxpayers' money (FSB 2011, p. 1, 2013c, p. 2). In November 2010, the FSB devised a framework for systemic risk management as the regulation of SIFIs, which now forms one of its six policy pillars. Its macroprudential governance thus revolves around the identification and surveillance of SIFIs, held to be the primary *loci* of systemic risk. These firms are singled out for stricter national capital requirements and scenario planning (FSB 2010b, see also BCBS 2013). The SIFI framework suppresses alternative visions of macroprudential regulation, which underline the social merits of public

regulation of financial activities, as well as the possibility of political limits to financialisation. In short, with the regulatory focus placed on specific firms, the SIFI framework fails to enact more progressive visions for macroprudential policymaking.

The gap between an ideational commitment to expansive conceptions of macroprudential regulation and more limited measurement choices clarifies that systemic risk cannot exist outside of the practices that make it knowable. Regulators' preference for small steps over big bangs can in part be explained with their recognition of the performative qualities of financial markets (Stellinga and Mügge 2017). The performativity of systemic risk has discursive and material facets through which various actors interpret regulatory designations and decisions as signals about potential future yields. Through talk and measurement, the FSB seeks to enact systemic risk as a stable property of diverse financial institutions operating in a vast array of heterogeneous and ever-evolving markets around the world. Its performative dilemma derives from a need for 'methodologies ... to be applicable to a wide range of NBNI financial entities that often have very different legal forms, business models and risk profiles ... while maintaining a certain degree of consistency across the entire NBNI financial space' (FSB and IOSCO 2015, p. 6).

As an IO, however, the FSB lacks the technical and legal infrastructure to access granular reporting data on firms' financial activities. It instead relies on data transmission from reporting systems of national supervisors to a 'data hub' at the Basel Committee on Banking Supervision (BCBS 2013, p. 7, 11). Furthermore, it cannot conduct more context-sensitive qualitative assessments, which are the preserve of national regulators. As one document explains, a fundamental problem for international systemic risk monitoring is 'obtaining appropriate and consistent data/information [across jurisdictions]' (FSB and IOSCO 2015, p. 6). Finally, the FSB works under legal constraints, as the transmission of sensible data to it abides by 'confidentiality regimes that prevent their use for global systemic risk assessment' (FSB and IOSCO 2015, p. 7).

The FSB's approach to carrying out systemic risk surveillance is shaped by these practical and technical constraints. In particular, they affect the selection of an entity-level assessment of risks, the SIFI approach, and the specific indicators chosen for assessing these entities. If, by contrast, systemic risk were understood more holistically as a property that inhered in diverse financial activities or instruments, then systemic risk would potentially be located anywhere and everywhere. Such a perspective would necessitate surveillance of the whole financial system, including small and emerging subsectors, which the FSB largely neglects. But overlooking the system in its entirety would undermine the FSB's ability to perform systemic risk as a stable object. Moreover, the metrics used to identify and isolate these entities must be visible in aggregated data accessible to the FSB (see, for example, BCBS 2013). The two conceptual evolutions discussed above – the re-definition of macroprudential regulation as systemic risk management and of systemic risk as a property of individual SIFIs – underpin a surveillance regime based on aggregated metrics relating to their 'size', 'interconnectedness' and 'complexity' (BCBS 2013).

This definition of 'systemic risk' renders the monitoring of idiosyncratic risks emerging from specific financial instruments or relationships within firms obsolete. It can, therefore, be isolated as a property held within several large, globally connected entities (FSB 2011). The FSB itself makes the practical imperatives explicit: 'A materiality threshold will provide an initial filter of the NBNI financial universe and limit the pool of firms ... such a threshold is relevant for reducing the size of the NBNI G-SIFI assessment pool to a *practical and manageable* number' (FSB and IOSCO 2015, p. 10, emphasis added). The FSB's SIFI framework thus holds systemic risk together as a property that can be isolated within financial entities of a certain size, using measurements of the aggregate properties of those entities. This framework is a prime example of how the infrastructural, practical demands of performing systemic risk as a governable object have served to tame this potentially transformative idea. Apparently prosaic technical constraints under which the FSB works condition its work in macroprudential governance, exemplified in a narrow entities-based approach to quantifying systemic risk.

Performative misfires have been evident in the controversies over the FSB's recent attempts to broaden the SIFI regime to shadow banking firms, extending the annually updated list of SIFIs to include insurers, investment funds, asset managers and other institutions (see FSB 2013c). As the indicator framework has been widened, private market actors and even civil society organisations have increasingly contested its meaning and applicability. In particular, there is growing opposition to the FSB's formulation of universal criteria for SIFIs in diverse institutional contexts. To retain the notion of systemic risk as a stable property, the FSB promotes a fixed set of factors, in principle applicable to any entity. The FSB consultation document stresses the correspondence of the central criteria across the financial system as a guiding principle for a coherent systemic risk governance regime (FSB and IOSCO 2015, p. 3). However, the FSB has faced considerable challenges in establishing these factors as universally valid and portable across contexts.

Efforts to extend the SIFI regime to investment funds in 2015 illustrate this tension. Apparently a technical indicator of systemic risk, 'size' became a major bone of contention between the FSB and the financial entities subject to its surveillance criteria. Specifically, the FSB proposed an 'Assets under Management' (AuM) indicator for the size and 'systemic importance' of investment funds, but firms and industry associations contested the use of AuM and balance sheet assets as indicators of systemic risk. Because hedge funds often increase their market exposure through leverage, the second size criterion – gross notional exposure (GNE) – quantifies an entity's 'market footprint' (FSB and IOSCO 2015, p. 39). The addition of this indicator is vital to the successful performance of the specific problem that the SIFI regime was developed to solve in the first place. As explained in the consultation document: '... the larger the GNE, the larger the potential impact to the system' (FSB and IOSCO 2015, p. 39). To the extent that size is found to not systemically correlate with risk, the FSB's wider enactment of systemic risk is destabilised.

In their consultation responses, firms argued that size was inappropriate to apply to investment funds because it focused undue attention on those funds that operated in the largest and most liquid markets. Larger entities could be seen as posing lower, not higher, levels of systemic risk. This position is exemplified in the response of Fidelity Investments (2015, p. 38): '... size is not indicative of systemic risk in asset management. To the contrary, larger asset managers tend to be more resilient.' In a response representative of the views articulated by many other firms and industry bodies, the Pacific Investment Management Company (PIMCO 2015, p. 15) further stated: 'The \$100 billion materiality threshold is arbitrary and says little about the riskiness of a fund.' Firms maintained that the concept of size was meaningful only in relation to a specific market. Following this view while retaining systemic risk as a stable object of macroprudential oversight would require a complex system for benchmarking and defining asset classes, with asset-specific size thresholds developed for each. In turn, the FSB's ability to enact systemic risk as a universal property of large financial entities vis-à-vis a unitary and singular 'financial system' would be undermined.

To maintain consistency in the monitoring of banks and non-banks, the FSB has extended its entities-based logic to shadow banking and now faces a similar problem. Contesting this move, firms tended to advocate a process-based understanding of risk. Vanguard (2015, p. 2), for example, complained: 'Entity-based designations that are driven by size will also never be capable of keeping up with potentially risky financial innovation in the markets, which can emerge from entities of any size, and will thereby miss the opportunity to accurately and adequately capture risk.' The European Fund and Asset Management Association (EFAMA 2015, p. 5) similarly argued for 'a more holistic and sensible approach to the identification and estimation of financial market risks arising out of five key economic "functions" or activities, instead of focussing on individual entities'. Numerous firms raised such concerns during the consultation period. The FSB rejected an activities-based understanding of systemic risk, citing consistency and practicality as the main reasons.

The controversy over the FSB's measurement practices surrounding SIFIs and shadow banks exemplify some of the practical difficulties in enacting systemic risk encountered by an international regulatory body. This case study highlights how the very ability to perform systemic risk as a property of distinct entities is undermined by the need to decide where the financial system 'stops'. In this

sense, it represents a test case for showing how disputes at the margins of this emerging monitoring regime have served to destabilise the wider edifice of the global governance of systemic risk. In quantifying this risk, the FSB located it in supposedly separable elements of the system, rather than the system itself. Not only does its approach put entities back at the centre of regulatory attention, but it also performs the global financial system and the risks posed to them as fairly static, which goes against the tenets of macroprudential theory. Partly as a consequence of these performative misfires, the future of the SIFI regime beyond the banking sector remains in doubt (FSB 2015). As Andrew Barry (2002, p. 274) insists, metrological standards that are routinely deployed for ‘restricting political controversy’ contribute to the ‘opening up of new objects and sites of disagreement’. To demonstrate that narrow enactments and performative tensions were not unique to the FSB, the next section explores similar dynamics at the IMF.

Governing Systemic Risk at the IMF

The IMF’s macroprudential ambition manifested itself in revisions to its established Financial Sector Assessment Programme (FSAP). An extension to the FSAP in 2010 stipulated regular ‘mandatory’ assessments for members with ‘systemically important’ financial sectors. The reform’s principal purpose was to better link the FSAP – a financial sector surveillance exercise conducted in tandem with the World Bank since 1999 – to IMF surveillance under Article IV (IMF Archives 2010a). The reform applied the idea of systemic risk to entire national financial sectors, where macroprudential policies are implemented. In pursuing this reform, the IMF responded to both a pledge previously made at the level of the FSB (2010a, p. 1) and growing internal dissatisfaction with its surveillance track record (IEO 2011). Based on publicly available IMF documents, including staff papers and Executive Board Minutes available through the online Archives Catalog, this section contends that the incorporation of macroprudential ideas into FSAP operations was constrained by microprudential logics of risk identification and quantification. The IMF operationalised systemic risk as concentrated in certain national financial sectors. While over the long run the organisational culture has moderated change in IMF surveillance (Moschella 2012), in the post-crisis period practices of risk measurement in the FSAP have also reined in more progressive macroprudential visions.

Beyond the principles established together with the BIS and the FSB, the IMF has developed its own macroprudential approach. Eschewing broader macroprudential questions about financialisation and global financial integration, work by IMF staff has centred on operationalising systemic risk and overcoming the associated challenges of measurement. The IMF’s commitment to system-level thinking was initially rather qualified: a 2009 staff paper contained three mentions of a ‘macroprudential approach’ (IMF 2009, p. 1, 8 (bold emphasis), 9), all of which had been redacted by the time it was released by the IMF Archives (2009).

However, the term ‘macroprudential’ has become increasingly prominent in official documents over the years, albeit with contradictory connotations. A telling example in this regard is a 2011 staff paper, entitled ‘Macroprudential policy—an organizing framework’, which recognises the uncertainties deriving from ‘the nature of financial crises [which] limits the ability of statistical tools to predict them’ (IMF Archives 2011, p. 13). The paper also suggests that systemic risk cannot always be attributed to particular classes of entities: ‘The monitoring of systemic risks by macroprudential policy should be comprehensive. It should cover all potential sources of such risk no matter where they reside’ (IMF Archives 2011, p. 4). Yet the same paper goes on to elaborate risk indicators that would allow national authorities to pinpoint risk locations and measure risk volumes, as well as institutional arrangements that would facilitate macroprudential policymaking. Subsequent reflections by both the staff and Executive Directors were devoted to similar issues (IMF Archives 2013a, 2013c). Although the IMF claims for itself the role of ‘a global macroprudential facilitator’ (IMF Archives 2013c, p. 38, bold emphasis removed), its operationalisation of systemic risk eclipses reflections on how financialisation could be curtailed, rather than just managed. This narrow view already

surfaced in the organisation's earlier occupation with 'macroprudential' financial soundness indicators (IMF 2000, p. 3–10).

Macroprudential thinking about systemic risk in the IMF then coexists uneasily with the continued fragmentation of the global financial system into national spheres. The revamped FSAP still operates along these traditional lines: countries with financial sectors deemed 'systemically important' ought to undergo an assessment once every five years, while participation remains voluntary for all other members (and independent of their Article IV obligations). IMF staff had initially advocated a three-year assessment cycle, but the majority of Executive Directors resolved not to endorse this more intrusive and costlier option (IMF Archives 2010c). The FSAP framework – in both its 2010 original version and a 2013 revision – focuses on quantifying systemic risk posed by national financial sectors. At the heart of the extended FSAP lies an aggregate variant of the 'too big and interconnected to fail' problem: like the FSB, the IMF thinking is in terms of entities – here national financial sectors instead of individual financial institutions – that must not fail because of their size and their links to each other.

Its measurement practices leave the IMF wedded to more conventional thinking. Systemic risk is construed as concentrated in twenty-nine (twenty-five until 2013) jurisdictions classified as 'systemically important' according to an adaptable risk metric.² In 2013, the IMF began to employ a clique percolation method to better gauge the interconnectedness of financial sectors (IMF Archives 2013d, p. 14–6). Assessments continue to treat national financial sectors as discrete entities, connected in four quantitatively determined, intersecting networks (in banking, debt, equity and price correlations). On an ad-hoc basis, the IMF also conducts 'regional' FSAPs for border-spanning currency unions. Nevertheless, it has no mandate (and arguably insufficient resources) to simultaneously assess multiple members that are connected not through institutionalised regional integration but through more erratic financial practices.

A genuinely macroprudential perspective would transcend an entities-based approach in favour of the more holistic view that risk can occur anywhere in the global financial system, not just in certain nationally regulated financial markets. However, the choice of an analytical instrument performs the social world in certain ways, rendering some dimensions more real than others (Law 2009). Despite acknowledging 'the fact that the systemic importance of a jurisdiction is a global property of the network' (IMF Archives 2013d, p. 15, emphasis added), the IMF prescribes mandatory FSAPs for only twenty-nine of its members. The FSAP performs systemic risk as being posed by some financial sectors occupying central network positions, rather than by the global financial system in its entirety. This stance becomes abundantly clear in Appendix I to the 2013 staff paper, in which IMF staff justify the choice of minimum values for the size of the four networks. Tinkering with these values would either lower or raise the number of 'systemically important' jurisdictions. In the most expansive scenario considered, the 'systemic core' would have comprised thirty-four jurisdictions, with the Czech Republic, Indonesia, Malaysia, Portugal and Saudi Arabia alongside the eventually included twenty-nine countries (IMF Archives 2013d, p. 32–3). In other words, the methodology and model specifications make some countries risky, but not others, while disregarding the inherent riskiness of a globalised financial system.

This narrow operationalisation of systemic risk indicates the limits of the Fund's post-crisis macroprudential approach. As an analytical framework and operational instrument through which the IMF tries to govern such risk, the FSAP exposes tensions and contradictions within its own contingent performances. As Executive Board proceedings demonstrate, while most Directors rejected the proposal of a higher assessment frequency, relatively few objected to the basic rationale for classifying countries when the metric was proposed and, again, when it was reviewed (IMF Archives 2010c, 2013b).³ On this count, the dynamics differ somewhat from those observed for the establishment of the FSB's regime.

Yet like the FSB's performances, the IMF's attempts to measure systemic risk and isolate it within 'risky' entities can misfire. Paradoxically, the surveillance regime built around mandatory FSAPs can reinforce the very problem that it was designed to address: the formation of financial sectors that

are too big and too interconnected to fail. By drawing a line between ‘systemically important’ – that is, ‘risky’ – financial sectors and those that are not, the IMF helps to keep the former big and interconnected. These closely monitored sectors cannot be allowed to fail, both because a failure of any such sector would send a particularly worrying signal to market actors and because it would question the effectiveness of IMF surveillance. Although sectors can move onto and from the list, as we discuss below, the division between ‘risky’ and ‘not risky’ ones leaves the original problem untouched. In this sense, reliance on a set number of financial sectors is self-defeating from a wider macroprudential perspective.

The classification of sectors into these two groups is neither natural nor trivial. Some risk management tools derive their functionality less from their precision than from their ability to cope with organisational challenges (Millo and MacKenzie 2009). As Figure 1 illustrates, the IMF’s enactments of systemic risk are highly contingent, though not arbitrary, involving choices of measurement methodologies and data sets. The interplay of a particular methodology with particular data makes certain risks real and others unreal. These dynamics surfaced in the shift from the original (2010) to the revised (2013) methodology for establishing the ‘systemic importance’ of financial sectors. Risk enactments produce what may be referred to as ‘additions’, ‘removals’ and ‘close calls’.⁴ An *addition* describes instances where a jurisdiction was excluded from the original list, but is subsequently included after a review; four additions were made in 2013: Denmark, Finland, Norway and Poland. A *removal* denotes instances where a jurisdiction is no longer considered ‘systemically important’; no removal has occurred since the introduction of mandatory FSAPs in 2010. A *close call*, finally, refers to instances where a jurisdiction would have made or not made it onto the list if a different method or data set had been used. Close calls are far more complicated to detect (because of the almost infinite possible combinations of methods and data) than additions or removals. Nonetheless, a review of the known instances of jurisdictions that either narrowly entered or narrowly missed the list offers some useful insights.

The upper-left hand cell in Figure 1 represents our starting point in 2010, with data from 2008 and the original methodology: IMF staff calculated the size (weighted by a factor of 0.7) and interconnectedness of financial sectors within the global banking network (0.3); ranked sectors according to their composite scores; and selected the two most significant clusters (out of three) comprising the final

		Methodology	
		<i>Old</i>	<i>New</i>
Data	<i>Old</i>	25 jurisdictions	29 jurisdictions (with Denmark, Norway, Poland and Portugal)
	<i>New</i>	24 jurisdictions (without Mexico)	29 jurisdictions (with Denmark, Finland, Norway and Poland)

Figure 1. The Contingency of Enactments in the IMF’s FSAP. Source: Authors’ overview based on IMF Archives (2013d, p. 19).

Notes: Shaded cells indicate realised enactments: the upper left-hand cell represents the status from 2010 to 2013, the lower right-hand cell the status since 2013.

twenty-five jurisdictions (IMF Archives 2010b). The lower-right hand cell depicts the situation in 2013 with the addition of Denmark, Finland, Norway and Poland. Their inclusion resulted from the application of the new clique percolation method to the new data. Apart from these actual changes, two of the many potential counterfactual enactments merit closer scrutiny.

One such enactment could have arisen from a combination of the old methodology with the new data, as presented in the lower-left hand cell. Had the more size-focused methodology been retained, the list would have shrunk to twenty-four jurisdictions: Mexico would have been ranked outside the group of 'systemically important' financial markets, and none would have been added (IMF Archives 2013d, p. 19). The original list could also have excluded Mexico quite easily. According to the 2010 background paper, the country, ranked 25th and quite removed from the centre of the banking network, was 'a borderline case' right from the start (IMF Archives 2010b, p. 12). In the short history of the mandatory FSAPs, Mexico has thus already been a close call twice.

The other alternative enactment could have arisen from a combination of the new methodology with the old data. In this scenario, shown in the upper-right hand cell, Portugal would have replaced Finland as one of the four additions. Moreover, the Danish, Norwegian and Polish financial sectors were categorised as 'systemically important' because the new methodology was used. Interestingly, at the launch of the new FSAP framework in 2010, Denmark (ranked 26th just below Mexico), Portugal (29th), Poland (32nd), Finland (34th) and Norway (35th) had all been assigned to the eventually dropped third cluster of financial sectors (IMF Archives 2010b, p. 10, 12). Further possibilities are not even accounted for in Figure 1. For example, in addition to Portugal, the Czech Republic, Indonesia, Malaysia and Saudi Arabia would have entered the 'systemically important' group if a different calculation parameter had been applied.

The division between 'systemically important' and other financial sectors is not merely a technical matter. It has tangible resource implications. To cover all twenty-nine sectors within the agreed five-year cycle, the IMF has to deliver nearly six mandatory FSAPs each year, or one every other month. The organisation has openly prioritised mandatory over voluntary assessments (IMF Archives 2013d, p. 7). Already in 2010, staff foresaw 'a sharp reduction in the Fund's capacity to deliver FSAP assessments to the rest of the membership on a voluntary basis' unless financial sector surveillance activities were allocated 'additional resources' (IMF Archives 2010a, p. 20). The IMF insists that '[s]ystemic importance is not a binary concept ...' (IMF Archives 2010a, p. 10, 2010b, p. 3), yet its risk practices create two sharply, albeit temporarily, demarcated regulatory worlds: one containing a minority of 'systemically important' financial sectors, which must be assessed regularly; and another containing the vast majority of all other financial sectors, which will be assessed only if a member volunteers for an FSAP and organisational resources permit it. Although the border between the two worlds can be redrawn through methodological revisions or data updates, until the next review no financial sector, even if it underwent rapid change, could be reclassified.

The IMF's enactments of systemic risk reverberate beyond budgetary allocations. They matter for political reasons. The reformed FSAP constitutes national financial sectors with certain characteristics as excessively risky for the global financial system and, simultaneously, prescribes mandatory assessments as a remedy. By performing financial sectors as distinguishable threats to the global financial system, the IMF downplays the risks posed by that system to countries and the well-being of their populations. A case in point is Iceland, whose excessively large financial sector was among the most spectacular to tumble despite regular IMF surveillance under Article IV and the FSAP prior to the financial crisis (IEO 2011, p. 15). If FSAPs serve as vehicles for organisational learning (Seabrooke 2012), staff, as well as the private sector professionals that are increasingly recruited as consultants for FSAP missions (Seabrooke and Nilsson 2015), learn to conceive of systemic risk in this unidirectional fashion. Similarly, Executive Directors, including those critical of mandatory assessments, often worry more about whether the 'right' countries are covered than about how global financial integration impinges on all members (IMF Archives 2010c, 2013b). This opposite direction of causality tends to elude quantification as long as data are collected primarily about – and with the help of – member states. From such a perspective, a national financial sector is less *at risk* than it is *a risk*.

Conclusion

The global governance of systemic risk continues to concentrate on single entities – be they financial institutions or national financial sectors. In this article, we have argued that the FSB and the IMF have translated their commitment to the macroprudential agenda into metrics that validate microprudential understandings of systemic risk. These enactments are predicated upon, in the FSB's case, the identification of, and agreement on, metrics for the 'size' of the 'market' in which firms operate; and, in the IMF's case, the creation of two groups of 'national' financial sectors predefined by the political borders placed around them. Since systemic risk is made a property of specific entities, these metrics anonymise and exculpate the global financial system itself, marginalising debates about institutional transformations that would strengthen public control over financialised economies. Our findings thus have important implications for how the potential for financial reform is envisaged and debated a decade after the global financial crisis.

The analysis points to an understudied paradox of financial surveillance (see Baker 2017, p. 7–18) exercised by international financial institutions: The provision of global financial stability represents a 'common-resource problem' (Tucker 2016), which should favour the coordination of domestic regulatory activities by IOs with a system-level perspective on increasingly complex cross-border financial transactions. Individual domestic agencies lack the structure and purview to furnish global analysis and set universal standards (IMF Archives 2013c, p. 31–5). At the same time, however, global surveillance demands that different contexts be grasped through simplified metrics that can travel across jurisdictions, such as measures of size as proxies of systemic risk. Thus, while the macroprudential agenda seems to require greater system-wide oversight, the technical and practical demands of performing systemic risk circumscribe its governance. Systemic risk may prove ungovernable without some measure of regulatory de-fragmentation and politically induced de-financialisation.

The organisations' renderings of systemic risk nonetheless remain open to counter-performances. As our case studies have highlighted, FSB and IMF surveillance operations rely on a contingent, albeit not arbitrary, distinction between presumably risky and presumably safe financial sectors. Decisions about which entities are classified as 'risky' – and which, by implication, are not – cannot be inferred from inherent features of these entities. Such classifications are made and remade through various interventions, including risk discourses and material devices that render some risk types, though not others, measurable, attributable and governable. Perhaps one of the most powerful effects of enacting systemic risk as a threat posed by discrete entities to the global financial system is the relative silencing of more far-ranging debates about the desirability of financialisation. As in other areas of global governance, apparently technical measurement choices have practical and political consequences.

Notes

1. All responses can be found online at: <http://www.fsb.org/2015/06/public-responses-to-march-2015-consultative-document-assessment-methodologies-for-identifying-nbni-g-sifis/>.
2. These twenty-nine financial sectors are (in alphabetical order): Australia, Austria, Belgium, Brazil, Canada, China, Denmark (added in 2013), Finland (added in 2013), France, Germany, Hong Kong SAR, India, Ireland, Italy, Japan, (South) Korea, Luxembourg, Mexico, the Netherlands, Norway (added in 2013), Poland (added in 2013), Russia, Singapore, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States (IMF Archives 2013d, p. 17, 19).
3. The most notable exception in 2010 was the Executive Director from Brazil, P. Nogueira Batista, who repeatedly demanded clarifications on the chosen metric, the underlying calculations and the resulting ranking; despite support from some colleagues, Batista was in the end the only Director to not approve the revised staff proposal and abstained instead (IMF Archives 2010c, p. 38–41, 52–3, 59, 65, 70–1, 74, 75–6, 79).
4. The IMF itself uses the first two terms or derivations to describe changes to the list and the sensitivity of its own calculations.

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References

- Abdelal, R., Blyth, M., and Parsons, C., 2010. Introduction: constructing the international economy. In: R. Abdelal, M. Blyth, and C. Parsons, eds. *Constructing the international economy*. Ithaca, NY: Cornell University Press, 1–19.
- Austin, J.L., 2017. We have never been civilized: torture and the materiality of world political binaries. *European journal of international relations*, 23 (1), 49–73.
- Baker, A., 2013. The new political economy of the macroprudential ideational shift. *New political economy*, 18 (1), 112–139.
- Baker, A. 2017. Political economy and the paradoxes of macroprudential regulation, SPERI Paper No. 40, March. Sheffield, Sheffield Political Economy Research Institute. Available from: <http://speri.dept.shef.ac.uk/wp-content/uploads/2017/03/SPERI-Paper-40-Political-Economy-and-the-Paradoxes-of-Macroprudential-Regulation.pdf> [Accessed 17 October 2017].
- Baker, A., 2018. Macroprudential regimes and the politics of social purpose. *Review of international political economy*, 25 (3), 293–316.
- Barry, A., 2002. The anti-political economy. *Economy and society*, 31 (2), 268–284.
- BCBS. 2013. *Global systemically important banks: updated assessment methodology and the higher loss absorbency requirement*, July. Basel, Basel Committee on Banking Supervision. Available from: <https://www.bis.org/publ/bcbs255.pdf> [Accessed 18 April 2018].
- Béland, D., and Orenstein, M.A., 2013. International organizations as policy actors: an ideational approach. *Global social policy*, 13 (2), 125–143.
- Berten, J., and Leisering, L., 2017. Social policy by numbers. how international organisations construct global policy proposals. *International journal of social welfare*, 26 (2), 151–167.
- Best, J., 2010. The limits of financial risk management: or what we didn't learn from the Asian crisis. *New political economy*, 15 (1), 29–49.

- Blyth, M., 2013. Paradigms and paradox: the politics of economic ideas in two moments of crisis. *Governance: An international journal of policy, administration, and institutions*, 26 (2), 197–215.
- Boin, A., 't Hart, P. and McConnell, A., 2009. Crisis exploitation: political and policy impacts of framing contests. *Journal of European public policy*, 16 (1), 81–106.
- Braun, B., 2014. Why models matter: the making and unmaking of governability in macroeconomic discourse. *Journal of critical globalisation studies*, 7, 48–79.
- Braun, B., 2016. From performativity to political economy: index investing, ETFs and asset manager capitalism. *New political economy*, 21 (3), 257–273.
- Broome, A., and Seabrooke, L., 2012. Seeing like an international organisation. *New political economy*, 17 (1), 1–16.
- Broome, A., Clegg, L., and Rethel, L., 2012. Global governance and the politics of crisis. *Global society*, 26 (1), 3–17.
- Broome, A., Homolar, A., and Kranke, M., 2018. Bad science: international organizations and the indirect power of global benchmarking. *European journal of international relations*, 24 (3), 514–539.
- Bryan, D., Rafferty, M., and Wigan, D., 2017. Capital unchained: finance, intangible assets and the double life of capital in the offshore world. *Review of international political economy*, 24 (1), 56–86.
- Callon, M., 1998. Introduction: the embeddedness of economic markets in economics. *The sociological review*, 46 (S1), 1–57.
- Callon, M., 2010. Performativity, misfires and politics. *Journal of cultural economy*, 3 (2), 163–169.
- Clegg, S.R., et al., 2013. Mundane objects and the banality of evil: the sociomateriality of a death camp. *Journal of management inquiry*, 22 (3), 325–340.
- Clement, P., 2010. The term 'macroprudential': origins and evolution, *BIS Quarterly Review* (March). Available from: http://www.bis.org/publ/qtrpdf/r_qt1003_h.pdf [Accessed 1 January 2016].
- Crockett, A.D., 2000. Marrying the micro- and macro-prudential dimensions of financial stability, Speech before the Eleventh International Conference of Banking Supervisors, 20–21 September. Basel, Bank for International Settlements. Available from: <http://www.bis.org/speeches/sp000921.htm> [Accessed 4 June 2016].
- Datz, G., 2013. The narrative of complexity in the crisis of finance: epistemological challenge and macroprudential policy response. *New political economy*, 18 (4), 459–479.
- de Goede, M., 2004. Repoliticizing financial risk. *Economy and society*, 33 (2), 197–217.
- de Goede, M., 2005. *Virtue, fortune, and faith: a genealogy of finance*. Minneapolis, MN: University of Minnesota Press.
- EFAMA, 2015. Response to consultative document (2nd): assessment methodologies for identifying NBNI G-SIFs: proposed high-level framework and specific methodologies, 29 May. Basel, Financial Stability Board. Available from: <http://www.fsb.org/wp-content/uploads/European-Fund-and-Asset-Management-Association-EFAMA1.pdf> [Accessed 29 November 2016].
- Espeland, W.N., and Stevens, M.L., 2008. A sociology of quantification. *European journal of sociology*, 49 (3), 401–436.
- Fidelity Investments, 2015. Response to consultative document (2nd): assessment methodologies for identifying Non-Bank Non-Insurer Global Systemically Important Financial Institutions, 27 May. Basel, Financial Stability Board. Available from: <http://www.fsb.org/wp-content/uploads/Fidelity-Management-and-Research-Company.pdf> [Accessed 29 November 2016].
- FSB, 2010a. *FSB framework for strengthening adherence to international standards*, 9 January. Basel, Financial Stability Board. Available from: http://www.fsb.org/wp-content/uploads/r_100109a.pdf [Accessed 20 April 2018].
- FSB, 2010b. *Reducing the moral hazard posed by systemically important financial institutions: FSB recommendations and time lines*, 20 October. Basel, Financial Stability Board. Available from: http://www.fsb.org/wp-content/uploads/r_101111a.pdf [Accessed 30 November 2016].
- FSB, 2011. *Policy measures to address systemically important financial institutions*, 4 November. Basel, Financial Stability Board. Available from: <http://www.fsb.org/wp-content/uploads/Policy-Measures-to-Address-Systemically-Important-Financial-Institutions.pdf> [Accessed 20 April 2018].
- FSB, 2013a. *Peer review of the United Kingdom*, review report, 10 September. Basel, Financial Stability Board. Available from: http://www.fsb.org/wp-content/uploads/r_130910.pdf [Accessed 18 April 2018].
- FSB, 2013b. *Peer review of the United States*, review report, 27 August. Basel, Financial Stability Board. Available from: http://www.fsb.org/wp-content/uploads/r_130827.pdf [Accessed 18 April 2018].
- FSB, 2013c. *Progress and next steps towards ending 'Too-Big-To-Fail' (TBTF)*, report of the Financial Stability Board to the G20, 2 September. Basel, Financial Stability Board. Available from: http://www.fsb.org/wp-content/uploads/r_130902.pdf [Accessed 20 April 2018].
- FSB, 2015. *Next steps on the assessment methodologies for Non-Bank Non-Insurer Global Systemically Important Financial Institutions (NBNI G-SIFs)*, 47/2015, 30 July. Basel, Financial Stability Board. Available from: <http://www.fsb.org/wp-content/uploads/NBNI-G-SIFI-Next-Steps-Press-Release.pdf> [Accessed 18 April 2018].
- FSB, 2017. *Implementation and effects of the G20 financial regulatory reforms*, 3rd annual report, 3 July. Basel, Financial Stability Board. Available from: <http://www.fsb.org/wp-content/uploads/P030717-2.pdf> [Accessed 18 April 2018].
- FSB, 2018a. About the FSB. Basel, Financial Stability Board. Available from: <http://www.fsb.org/about/> [Accessed 17 November 2018].
- FSB, 2018b. Vulnerabilities assessment. Basel, Financial Stability Board. Available from: <http://www.fsb.org/what-we-do/vulnerabilities-assessment/> [Accessed 17 November 2018].

- FSB and IOSCO. 2015. Assessment methodologies for identifying Non-Bank Non-Insurer Global Systemically Important Financial Institutions: proposed high-level framework and specific methodologies, consultative document (2nd), 4 March. Basel and Madrid, Financial Stability Board and International Organization of Securities Commissions. Available from: <http://www.fsb.org/wp-content/uploads/2nd-Con-Doc-on-NBNI-G-SIFI-methodologies.pdf> [Accessed 24 April 2018].
- FSB, IMF and BIS. 2011. *Macroprudential policy tools and frameworks: progress report to G20*, 27 October. Basel, Financial Stability Board, International Monetary Fund and Bank for International Settlements. Available from: http://www.fsb.org/wp-content/uploads/r_111027b.pdf [Accessed 27 February 2018].
- G20. 2009. *Progress report on the economic and financial actions of the London, Washington and Pittsburgh G20 Summits*, prepared by the UK Chair of the G20, 7 November. St Andrews, G20. Available from: <http://www.g20.utoronto.ca/2009/2009progressreport1107.pdf> [Accessed 20 April 2018].
- Gamble, A., 2014. *Crisis without end? the unravelling of western prosperity*. Basingstoke: Palgrave Macmillan.
- Goodhart, L.M., 2015. Brave new world? macro-prudential policy and the new political economy of the federal reserve. *Review of international political economy*, 22 (2), 280–310.
- Haldane, A.G. 2009. Rethinking the financial network, speech at the Financial Student Association, Amsterdam, BIS Review 53, 28 April. Available from: <https://www.bis.org/review/r090505e.pdf> [Accessed 18 April 2018].
- Haldane, A. 2013. Macroprudential policies – when and how to use them, paper presented at the Rethinking Macro Policy II: First Steps and Early Lessons Conference, International Monetary Fund, Washington, DC, 16–17 April. Available from: <https://www.imf.org/external/np/seminars/eng/2013/macro2/pdf/ah.pdf> [Accessed 8 January 2016].
- Hansen, H.K., and Porter, T., 2012. What do numbers do in transnational governance? *International political sociology*, 6 (4), 409–426.
- Heimberger, P., and Kapeller, J., 2017. The performativity of potential output: pro-cyclicality and path dependency in coordinating European fiscal policies. *Review of international political economy*, 24 (5), 904–928.
- Helleiner, E., 2010. What role for the new Financial Stability Board? the politics of international standards after the crisis. *Global policy*, 1 (3), 282–290.
- Helleiner, E., 2014. *The status quo crisis: global financial governance after the 2008 financial meltdown*. Oxford: Oxford University Press.
- IEO. 2011. *IMF performance in the run-up to the financial and economic crisis: IMF surveillance in 2004–07*. Washington, DC, International Monetary Fund. Available from: <http://www.ieo-imf.org/ieo/files/completedevaluations/Crisis-%20Main%20Report%20%28without%20Moises%20Signature%29.pdf> [Accessed 8 August 2011].
- IMF. 2000. Macroprudential indicators of financial system soundness, Occasional Paper 192, April. Washington, DC, International Monetary Fund. Available from: <https://www.imf.org/external/pubs/ft/op/192/OP192.pdf> [Accessed 1 January 2016].
- IMF. 2009. *Lessons of the financial crisis for future regulation of financial institutions and markets and for liquidity management*, 4 February. Washington, DC, International Monetary Fund. Available from: <https://www.imf.org/external/np/pp/eng/2009/020409.pdf> [Accessed 17 June 2016].
- IMF Archives. 2009. Lessons of the financial crisis for future regulation of financial institutions and markets and for liquidity management, SM/09/33, 4 February. Washington, DC, International Monetary Fund. Available from: http://adlib.imf.org/digital_assets/wwwopac.ashx?command=getcontent&server=webdocs&value=EB/2009/SM/330696.PDF [Accessed 16 September 2016].
- IMF Archives. 2010a. Integrating stability assessments under the Financial Sector Assessment Program into Article IV surveillance, SM/10/235, 31 August. Washington, DC, International Monetary Fund. Available from: http://adlib.imf.org/digital_assets/wwwopac.ashx?command=getcontent&server=webdocs&value=EB/2010/SM/353262.PDF [Accessed 30 June 2015].
- IMF Archives. 2010b. Integrating stability assessments under the Financial Sector Assessment Program into Article IV surveillance—background material, SM/10/235, Sup. 1, 31 August. Washington, DC, International Monetary Fund. Available from: http://adlib.imf.org/digital_assets/wwwopac.ashx?command=getcontent&server=webdocs&value=EB/2010/SM/353263.PDF [Accessed 30 June 2015].
- IMF Archives. 2010c. Minutes of Executive Board Meeting, EBM/10/92-1, 21 September. Washington, DC, International Monetary Fund. Available from: <https://imfbox.box.com/shared/static/suj1vekfs777s7vw8xc84xgqi4aucxu2.pdf> [Accessed 24 May 2018].
- IMF Archives. 2011. Macroprudential policy—an organizing framework, SM/11/54, 15 March. Washington, DC, International Monetary Fund. Available from: <https://imfbox.box.com/shared/static/7r6xhdv0jnu4ke8089h1f3716zb5t11b.pdf> [Accessed 27 February 2018].
- IMF Archives. 2013a. The Acting Chair's summing up: key aspects of macroprudential policy, BUFF/13/65, 1 July. Washington, DC, International Monetary Fund. Available from: <https://imfbox.box.com/shared/static/t4o19ptvznrpaj53bzbr91bast1ny1mv.pdf> [Accessed 24 May 2018].
- IMF Archives. 2013b. The Acting Chair's summing up: mandatory financial stability assessments under the Financial Sector Assessment Program—update, BUFF/13/115, 6 December. Washington, DC, International Monetary Fund. Available from: <https://imfbox.box.com/shared/static/mnnpv5b5qe1kfcuiwp3t7ytdprfy3ut.pdf> [Accessed 24 May 2018].

- IMF Archives. 2013c. Key aspects of macroprudential policy, SM/13/145, 11 June. Washington, DC, International Monetary Fund. Available from: <https://imfbox.box.com/shared/static/3cf2wgjbl8wh0ntz9pj43ehtpraazw56.pdf> [Accessed 24 May 2018].
- IMF Archives. 2013d. Mandatory financial stability assessments under the Financial Sector Assessment Program—update, SM/13/304, 18 November. Washington, DC, International Monetary Fund. Available from: <https://imfbox.box.com/shared/static/32ou9g5h1mki72onjhijpzz8ow86erug.pdf> [Accessed 24 May 2018].
- IMF, FSB and BIS. 2016. *IMF-FSB-BIS elements of effective macroprudential policies: lessons from international experience*, 31 August. International Monetary Fund, Financial Stability Board and Bank for International Settlements. Available from: <https://www.imf.org/external/np/g20/pdf/2016/083116.pdf> [Accessed 27 February 2018].
- Kaya, A., and Herrera, G., 2015. Why the 2008 crisis was a bad crisis for new ideas. *Journal of international relations and development*, 18 (4), 505–531.
- Knight, F.H., 1964. *Risk, uncertainty and profit*. New York, NY: Augustus M. Kelley.
- Konings, M., 2016. Governing the system: risk, finance, and neoliberal reason. *European journal of international relations*, 22 (2), 268–288.
- Langley, P., 2010. The performance of liquidity in the subprime mortgage crisis. *New political economy*, 15 (1), 71–89.
- Langley, P., 2015. *Liquidity lost: the governance of the global financial crisis*. Oxford: Oxford University Press.
- Latour, B., 1992. 'Where are the missing masses? the sociology of a few mundane artifacts'. In: W.E. Bijker, and J. Law, eds. *Shaping technology/building society: studies in sociotechnical change*. Cambridge, MA: MIT Press, 225–258.
- Law, J., 2009. Seeing like a survey. *Cultural sociology*, 3 (2), 239–256.
- Lockwood, E., 2015. Predicting the unpredictable: value-at-risk, performativity, and the politics of financial uncertainty. *Review of international political economy*, 22 (4), 719–756.
- Lombardi, D., and Moschella, M., 2017. The symbolic politics of delegation: macroprudential policy and independent regulatory authorities. *New political economy*, 22 (1), 92–108.
- Lothian, T., 2012. Beyond macroprudential regulation: three ways of thinking about financial crisis, regulation and reform. *Global policy*, 3 (4), 410–420.
- MacKenzie, D., 2006. Is economics performative? option theory and the construction of derivatives markets. *Journal of the history of economic thought*, 28 (1), 29–55.
- MacKenzie, D., and Millo, Y., 2003. Constructing a market, performing theory: the historical sociology of a financial derivatives exchange. *American journal of sociology*, 109 (1), 107–145.
- Matthijs, M., 2016. Powerful rules governing the euro: the perverse logic of German ideas. *Journal of European public policy*, 23 (3), 375–391.
- Millo, Y., and MacKenzie, D., 2009. The usefulness of inaccurate models: towards an understanding of the emergence of financial risk management. *Accounting, organizations and society*, 34 (5), 638–653.
- Mirowski, P., 2013. *Never let a serious crisis go to waste: how neoliberalism survived the financial meltdown*. London: Verso.
- Mol, A., 2002. *The body multiple: ontology in medical practice*. Durham, NC: Duke University Press.
- Moschella, M., 2010. *Governing risk: the IMF and the global financial crisis*. Basingstoke: Palgrave Macmillan.
- Moschella, M., 2012. IMF surveillance in crisis: the past, present and future of the reform process. *Global society*, 26 (1), 43–60.
- Moschella, M., 2013. Designing the Financial Stability Board: a theoretical investigation of mandate, discretion, and membership. *Journal of international relations and development*, 16 (3), 380–405.
- Moschella, M., and Tsingou, E. (eds) 2013a. *Great expectations, slow transformations: incremental change in post-crisis regulation*. Colchester: ECPR Press.
- Moschella, M., and Tsingou, E., 2013b. Introduction: the financial crisis and the politics of reform: explaining incremental change. In: M. Moschella, and E. Tsingou, eds. *Great expectations, slow transformations: incremental change in post-crisis regulation*. Colchester: ECPR Press, 1–33.
- Park, S., 2006. Theorizing norm diffusion within international organizations. *International politics*, 43 (3), 342–361.
- Persaud, A. 2010. 'Too big to fail' is no redemption song, Blog entry on VoxEU.org, 10 February. Available from: <https://voxeu.org/article/too-big-fail-no-redemption-song> [Accessed 6 September 2018].
- PIMCO. 2015. Response to consultative document (2nd): assessment methodologies for identifying Non-Bank Non-Insurer Global Systemically Important Financial Institutions, 29 May. Basel: Financial Stability Board. Available from: <http://www.fsb.org/wp-content/uploads/PIMCO.pdf> [Accessed 29 November 2016].
- Schmidt, V.A., and Thatcher, M. (eds) 2013. *Resilient liberalism in Europe's political economy*. Cambridge: Cambridge University Press.
- Seabrooke, L., 2012. Pragmatic numbers: the IMF, financial reform, and policy learning in least likely environments. *Journal of international relations and development*, 15 (4), 486–505.
- Seabrooke, L., and Nilsson, E.R., 2015. Professional skills in international financial surveillance: assessing change in IMF policy teams. *Governance: an international journal of policy, administration, and institutions*, 28 (2), 237–254.
- Stellinga, B., and Mügge, D., 2017. The regulator's conundrum. how market reflexivity limits fundamental financial reform. *Review of international political economy*, 24 (3), 393–423.
- Thiemann, M., 2018. Is resilience enough? the macro-prudential reform agenda and the lacking smoothing of the cycle. *Public administration*. doi:10.1111/padm.12551.

- Tucker, P. 2016. The design and governance of financial stability regimes: a common-resource problem that challenges technical know-how, democratic accountability and international coordination, *Essays on International Finance*, Vol. 3, September. Waterloo, ON, Centre for International Governance Innovation. Available from: https://www.cigionline.org/sites/default/files/financial_essay_vol.3_web.pdf [Accessed 16 August 2018].
- Turner, A. 2011. Reforming finance: are we being radical enough? 2011 Clare Distinguished Lecture in Economics and Public Policy, Clare College, Cambridge, 18 February. London, Financial Services Authority. Available from: http://www.fsa.gov.uk/pubs/speeches/0218_at_clare_college.pdf [Accessed 24 October 2017].
- Vanguard. 2015. Response to consultative document (2nd): assessment methodologies for identifying Non-Bank Non-Insurer Global Systemically Important Financial Institutions, 29 May. Basel, Financial Stability Board. Available from: <http://www.fsb.org/wp-content/uploads/Vanguard.pdf> [Accessed 29 November 2016].
- Widmaier, W.W., 2016. *Economic ideas in political time: the rise and fall of economic orders from the Progressive Era to the global financial crisis*. Cambridge: Cambridge University Press.
- Widmaier, W.W., Blyth, M., and Seabrooke, L., 2007. Exogenous shocks or endogenous constructions? the meanings of wars and crises. *International studies quarterly*, 51 (4), 747–759.