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The financial valuation crisis

The inherent limits to taming unstable markets

Stellinga, B.J.P.

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1 Introduction

1.1 The financial valuation crisis

“In many respects, the current crisis is about valuation”, Banque de France governor Christian Noyer remarked in October 2008, just one month after the collapse of Lehman Brothers (Noyer 2008: 1). Widespread uncertainty about financial firms’ exposure to complex instruments – the value and riskiness of which could barely be determined – triggered massive panic and threatened to cause a complete meltdown of the financial system, only prevented by central banks’ bold actions.

But if this was a crisis of financial valuation – a convenient shorthand for firms’ pricing and risk-management techniques – it was surely also a crisis of its governance. Accounting standard setters required firms to use destabilizing mark-to-market accounting practices for a significant part of their balance sheets (Botzem 2013). Banking regulators allowed big banks to use their own risk models to calculate required safety margins, but the models proved woefully inadequate and the safety margins insufficient (Lall 2012). Policymakers also gave credit rating agencies (CRAs) a central regulatory role, but many of their ratings for complex products were far off the mark (Partnoy 2009). Financial regulators and supervisors apparently allowed, or even required, the widespread use of flawed models and tools.

These problems did not come entirely as a surprise. In the decades before the crisis – as globalization, technological innovations, and market liberalization transformed financial sectors radically – firms’ risk management and accounting practices had become a focal point for financial regulators. While policymakers identified innovative private sector valuation practices as a potential boon for financial stability policy, they also expressed concerns about their potentially destabilizing effects. Banking regulators acknowledged the risks of an excessive use of mark-to-market accounting, pressuring accounting standard setters to limit its scope. They also worried about fully delegating risk assessment responsibilities to banks in capital adequacy regulation, leading them to introduce quite extensive model requirements and design key parameters themselves. Neither did they delegate full responsibilities for risk measurement to credit rating agencies. Moreover, far from embracing pre-crisis rules unconditionally, regulators often acknowledged that these were work-in-progress and that further reforms would be necessary (European Central Bank [ECB] 2004; Tarullo 2008).

It took the financial crisis, however, to demonstrate the systemic dangers of these valuation practices (Brunnermeier et al. 2009; Financial Services Authority [FSA] 2009b; Warwick Commission 2009). Policymakers themselves identified major flaws in these market practices and in the ways in which financial policy had dealt with them. The seminal Turner Review, published half a year after the Lehman Brothers-collapse, argued the crisis triggered “fundamental questions about our ability in principle to infer future risk from past observed patterns” (FSA 2009b: 44). Considering valuation practices, it stressed that at the “system level, the idea that values are realisable because observable in the market at a point in time is illusory [if] all market participants attempt simultaneously to liquidate positions” (FSA 2009b: 65). Policy makers thus acknowledged major flaws in pre-crisis practices and assumptions, pledging to reform financial regulation to limit the probability and severity of future financial crises.

Worryingly, the crisis does not seem to have led to a fundamental overhaul of pre-crisis valuation rules (Pagliari 2012; Helleiner 2014). Although accounting standard setters substantially revised the standard for financial instruments, financial firms are still required to apply market value accounting to a substantial part of their balance sheets. Policymakers have reduced regulatory reliance on banks’ risk models and they strengthened model requirements, but the rules still allow banks to use their own models to calculate safety margins (Carmassi and Micossi 2012). Despite significant shortcomings exposed by the crisis, regulators also continue to rely on CRAs’ credit ratings, and they hardly introduced substantive requirements for CRAs’ risk models (Botzem 2013; Underhill 2015).

Neither have policymakers’ attempts to strengthen their own risk assessment tools lived up to the high ambitions formulated immediately after the crisis (e.g. High-Level Group on Financial Supervision in the EU 2009). Policymakers developed so-called macroprudential policies aimed at limiting system risks in a top-down fashion. A key aspect of this would be to ensure rules would operate countercyclically, increasing in stringency when systemic risks build-up, while becoming more lenient when risks turn into financial distress (Baker 2013b). Yet the reforms that were implemented are quite modest. The scope of macroprudential policy is limited, being confined mainly to capital requirements. Governance arrangements are complicated, perhaps slowing down a timely response to the build-up of systemic risk. Crucially, there is still much controversy over how to identify and mitigate such risks. As a result, the policy frameworks lack clear guidance on how macroprudential authorities should prevent financial disasters in the future (Barwell 2014).

During the post-crisis period, policymakers have frequently backtracked on reform proposals or embraced uneasy compromises that nobody seems particularly happy about. Even though we now often hear policymakers praising post-crisis progress in regulatory reform, at the same time they express concerns about the extent to which newly designed rules will ensure valuation routines conducive to financial stability (Constancio 2014; Claessens 2016). It appears to be very difficult to design valuation rules conducive to financial stability, even after having learned all the crisis lessons.

From these observations flows the following research question:

- *What explains financial policymakers' apparent inability to design coherent and effective regulatory approaches to financial firms' and supervisors' valuation routines?*

This question can be split up into the following sub-questions:

- *How have international rules on firms' and supervisors' valuation routines – accounting and risk modelling – developed over time?*
- *What are the financial stability implications of the various valuation approaches in accounting and financial risk modelling?*
- *What substantive problems do regulators face when designing rules for financial valuation?*
- *How do these substantive problems affect governance patterns in the relevant regulatory domains?*

In this thesis, I argue that the key to answering these questions lies in the perspective we adopt on the links between valuation practices, public regulation, and financial stability. The International Political Economy (IPE)-scholarship on financial regulation generally treats the financial system itself as a background variable, while focusing mainly on the actors (policymakers, supervisors, banks) who write or influence the rules (cf. Tsingou 2015). It implicitly assumes a relatively straightforward link between the regulation of valuation practices and financial stability: valuation practices can readily be ranked according to their contribution to stability. This suggests that regulators could in principle design valuation rules conducive to financial stability. While scholars differ in their explanation for why policymakers implement defective rules – generally highlighting either institutional path-dependencies, regulatory capture by powerful firms, or flawed regulatory ideas – the factors they emphasize are all essentially *external* obstacles.

I argue that we should adopt a different perspective on valuation practices and their link with financial stability. The central claim is that if we conceptualize financial markets as a reflexive system, we get a much better understanding of the problems to regulate financial valuation practices effectively. Reflexivity implies that financial markets have no stable footing; they depend on market participants' assessments. It is at the heart of financial markets' inherent instability. Market participants' optimistic assessments are self-enforcing when they drive up asset prices and thereby confirm initial expectations. This feedback loops raises the fragility of the system although it appears increasingly stable, until the imbalances unravel and the system spirals out of control (Minsky 2008 [1986]; Soros 2008). I argue that financial market reflexivity has key implications for financial market *regulation*, particularly for the governance of financial firms' valuation practices. Policymakers cannot regulate reflexivity away, and any particular regulatory approach comes with severe downsides and potential stability risks. Reflexivity itself is key to understanding regulators' struggles with valuation routines – both before, and after the crisis.

To substantiate this argument, the thesis' empirical body consists of four chapters (chapters 3-6) that address market reflexivity's regulatory implications for particular valuation domains. The chapters deal with accounting standards, credit rating agencies, and liquidity and capital standards for banks. In all these domains, reflexivity causes regulatory dilemmas that hamper the design of coherent and prudent valuation routines. Similarly, reflexivity hinders post-crisis attempts to make financial rules operate countercyclically – countering markets' boom-bust patterns stemming from reflexive feedback loops. This macroprudential approach to financial regulation falters on regulators' inability to confidently identify and mitigate systemic risks. In these chapters, I show that focusing on the nature of the problem that policymakers must tackle is key to understanding the frequent policy reversals and often half-baked regulatory outcomes.

The rest of this introductory chapter serves to summarize the thesis. I first discuss how dominant IPE-approaches have approached the research questions outlined above, highlighting several shortcomings and gaps. In section 3, I present my main argument. In section 4, I discuss the research approach, focusing on the case selection and methods used. Section 5 concludes with a short overview of the rest of the thesis.

1.2 Gaps in the existing literature

As international regulatory forums have gained increased importance in rule development, the IPE-literature on financial regulation is an obvious place to start investigating the politics of financial valuation. How do different strands explain the rules' substance, and to what extent do

valuation dilemmas play an explanatory role? At the risk of oversimplification, we can identify three main lines of reasoning.

A first line sees international rules as a mix of historically developed national regulatory approaches. Financial regulators design rules conducive to a stable and efficient national financial system. In response to globalization, states harmonize certain rules, but aim to ensure their national approach remains intact or is not fundamentally challenged by the international standards (Simmons 2001; Singer 2007). States' rule-preferences to a large extent depends on the relative importance of capital markets and banking for financing the economy. For example, 'capital market countries' such as the USA are assumed to favor mark-to-market (fair value) accounting, given its focus on up-to-date numbers and transparency for outside investors. In contrast, 'banking countries' such as Germany favor historical cost accounting, given its more conservative accounting approach (Perry and Nölke 2006; Palea 2015). International rules are an uneasy compromise.

While this line of reasoning is right to highlight national differences in financial approaches, regulatory controversies are confined to clashes between different national approaches. This assumes that national regulators would in principle be able to design the perfect rules, if only they were not constrained by financial globalization. This assumption seems unwarranted.

A second research strand links the rules' substance to powerful private actors' material interests. Financial rules have distributional consequences for firms, as they introduce compliance costs and (more importantly) set the terms of competition (Underhill 1997). Regulators must balance private actors' competing demands, while also paying attention to broader public interest goals such as financial stability. Global financial policymaking is particularly prone to 'capture', given the opaque and technical nature of financial regulation and the lack of meaningful ways for stakeholders to influence policymaking but for a small set of well-organized and resourceful private actors. These actors thus often succeed in bending the rules to their advantage, to the detriment of small firms and the general public. Turning to financial valuation, material interest scholars argue that the relevant rules mainly reflect the wishes of big, transnational firms. For example, big banks pushed for the shift to regulatory reliance on banks' risk models in capital adequacy standards to lower their capital requirements (Blom 2012; Lall 2012).

While this strand rightly stresses the importance of powerful firms, it treats regulatory controversies about rule substance as a simple trade-off between public and private interests. Like the first strand, it implicitly or explicitly assumes that regulators *could* design the perfect rules

conducive to financial stability, only now the problem is regulatory capture. Again, this does not really get at the heart of why financial valuation appears to be so difficult for policymakers.

A third and final strand emphasizes that rule substance derives mainly from policymakers' regulatory ideas. Policymakers embrace a policy paradigm – collectively held ideas about policy goals, the kind of instruments to attain them, and the nature of the problem they should address (Hall 1993: 279) – and design rules accordingly. IPE-scholars have argued that pre-crisis rules reflected a progressive institutionalization of neoliberal ideas. At the neoliberal paradigm's core is the idea that market forces are generally the best way to achieve public interests. For example, regulatory reliance on credit ratings reflected regulators' belief in their superiority over publicly developed risk-indicators (Mügge 2011a). Whether or not the crisis triggered a 'paradigm shift' is still subject of debate (cf. Baker 2013; Blyth 2013).

This line of reasoning correctly emphasizes the importance of regulators' ideas. Yet by locating regulatory controversies at the level of translating abstract economic ideas into concrete policies, the paradigm perspective gives little guidance for understanding why policymakers appear to be continuously struggling with financial valuation. Indeed, when the crisis hit valuation rules were much more incoherent than the paradigm perspective would have us believe. Surely there is more going on.

1.3 The reflexivity problem

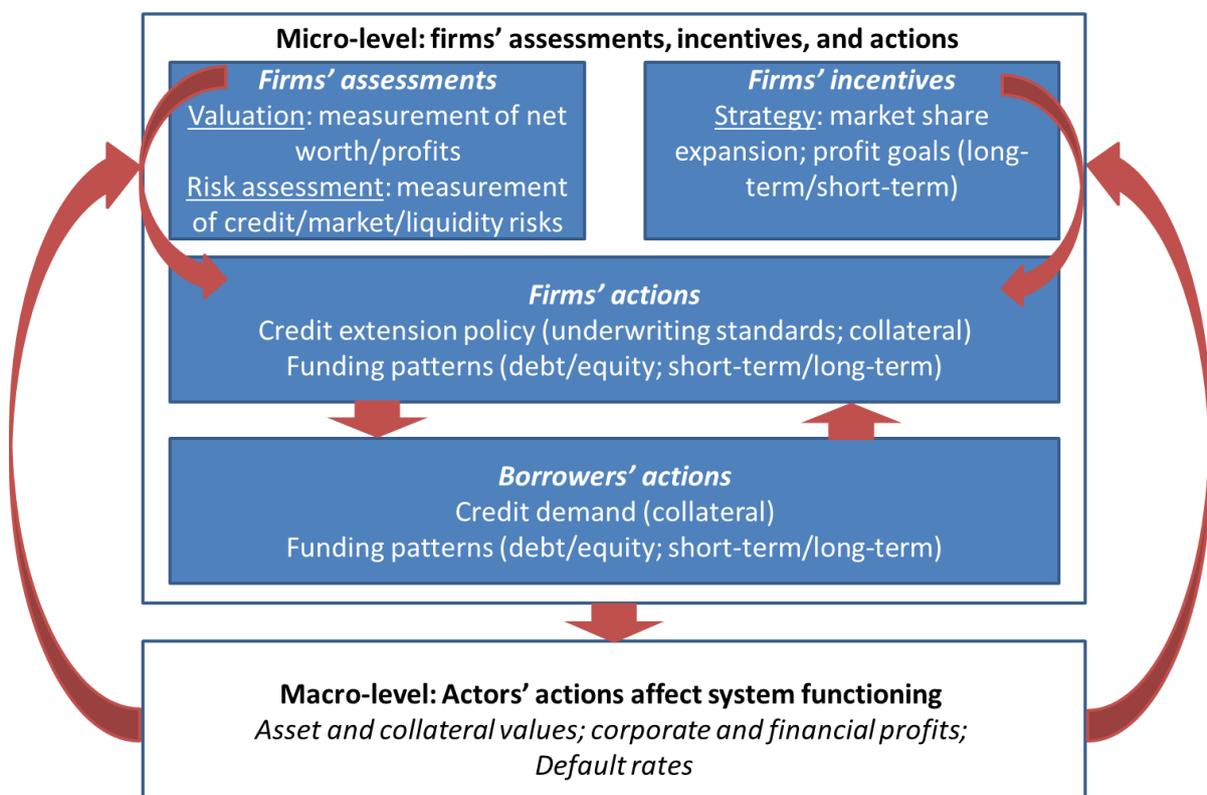
Notwithstanding the differences between these three approaches, they have in common a general neglect of the financial system's nature and the problem that financial regulation needs to address. In this thesis, I argue that the policy's *substance* is in fact the key to understand *the politics* of financial regulation. If we follow heterodox economics-accounts that conceptualize financial markets as reflexive (self-referential) systems, we get a much better understanding of why regulators struggle to design effective valuation rules.

The financial system consists of a wide array of actors that create and trade financial instruments – debt, equity, and insurance contracts – that link the present to an uncertain future. We can think of it as a web of interlocking claims on other actors' future income streams. By concluding a debt contract, two parties agree to exchange a sum of money today in exchange for future re-payment. Yet by being contingent on future events, there is something inherently intractable and unstable about the financial system. If financial firms' assessments of other market participants' abilities to meet commitments turn out to be wrong, the (implied) losses might endanger their own ability to

repay other actors. This might set off widespread turmoil and can completely destabilize the system. This is essentially what happened in the crisis of 2007-9.

The problem thus goes beyond fundamental uncertainty about future outcomes. In reflexive systems, there is a two-way feedback loop between participants' actions and the system's functioning. As participants' *assessments* shape their actions, the system's functioning ultimately depends on actors' ideas about how the system operates. Translated to finance, this means that financial markets ultimately rest on market participants' beliefs, rather than being anchored in objective 'economic fundamentals' (Soros 2008; Beinhocker 2013; Bronk 2013; see figure 1.1).

Figure 1.1 Schematic representation of the financial sector as a reflexive system



The resulting indeterminacy is a key component of Minsky's (2008 [1986]) account of financial markets' inherent instability. In economically benign circumstances, financial institutions' positive experiences will encourage increased lending. Simultaneously, households and businesses feel more confident about future outcomes, encouraging increased borrowing on their part. In the aggregate this reinforces the good economic conditions. A feedback loop sets in where credit and optimism feed off each other. But if this process goes on for too long, the system becomes increasingly fragile: more and more market participants take on debt-positions that require ever increasing profits and asset price rises to be paid off. Increasing fragility makes the system more

prone to a destabilizing response to unexpected changes in economic conditions. If the system is fragile enough, small changes – such as a firm default or an interest rate hike – may set-off a downward spiral of losses, asset sales, asset price collapses, further losses, further asset sales, etc. Market participants’ pessimism then also becomes self-reinforcing, but often in a much more violent manner than in the previous upswing (cf. Kregel 2008; Minsky 2008 [1986]; Wray 2009).

Financial actors’ assessments of other actors’ future ability to meet commitments are thus at the core of the financial system. These *valuation routines* come in two basic guises: risk assessment, and assigning monetary values to assets and liabilities (valuation in the narrow sense). Risk assessment means estimating the likelihood of different future scenarios, for example that a debtor defaults, that an investment portfolio will lose value, that a currency will crash, or that ultra-low interest rates will continue. The assignment of prices to financial instruments builds on such risk assessments, and it concerns both the valuation of a portfolio that is held by an institution as well as an estimation of what an appropriate price would be for which to buy or sell a particular asset.¹ Unsurprisingly, firms take great interest in the proper execution of these activities; after all, valuation practices influence their profits, their competitiveness, and the risks of going bankrupt.

As becomes clear from the social studies of finance (SSF)-literature, financial markets’ reflexive nature implies that these valuation practices are *performative*: they shape the values that they supposedly merely measure. MacKenzie’s (2004; 2006) seminal contributions focused on financial theories’ performative effects. For example, he asserted that a finance theory (the Black-Scholes option pricing formula) not so much *described* an already existing state of affairs, but through its widespread application helped make derivatives trading possible. But performativity is not confined to theories: given the right conditions, all valuation practices can transform the environment that is being measured. So, credit ratings are performative in the sense that positive assessments can trigger easy access to credit, in turn confirming the initial positive assessment (Carruthers 2013; Esposito 2013b).

What is key for my argument is that conceptualizing financial markets as reflexive, and valuation practices as performative, puts the governance of financial valuation in a new perspective. Not only is there ultimately no ‘objective’ basis to determine a financial instrument’s value and risk,

¹ These definitions are taken from: Stellinga, B. and Mügge, D.K. (2017) ‘The regulator’s conundrum. How market reflexivity limits fundamental financial reform’, *Review of International Political Economy*, 24 (3): 393-423; see also chapter 5.

but valuation practices shape these. It is not obvious what valuation approach will contribute to financial stability. Valuation approaches that rely on up-to-date market prices can hardwire financial markets' boom-bust nature in financial regulation. But the alternatives (using historical data or relying on stress tests) can be just as performative – and just as bad. Worse still, it is unclear how prescriptive regulators should be vis-à-vis financial firms. An overly prescriptive approach risks steering everybody in the same direction, potentially reinforcing herd behavior. But a very flexible approach risks becoming meaningless, may invite regulatory arbitrage, and may still allow for private sector induced herding. In short, both flexibility and prescriptiveness can have harmful unintended consequences.

This perspective thus gives clear reasons why regulators struggle to design coherent and effective regulatory approaches for financial valuation. It suggests that regulators must choose from inevitably flawed valuation approaches with indeterminate links to financial stability. And it implies that neither a very prescriptive nor a hands-off approach is sustainable for a very long time. As the inevitable unintended consequences of any particular approach emerge, regulators will be tempted to modify the rules to limit instability problems in the short run.

1.4 The research focus

The goal of the empirical research has been to investigate the extent to which dilemmas caused by financial markets' reflexive nature affect the politics of financial valuation. I have studied the valuation issues that are key to modern day financial market functioning: accounting for financial instruments, the issuance and use of credit ratings, and the assessment of credit and liquidity risks of banks' assets and liabilities. In addition, I have investigated how similar dilemmas affected the design of public systemic risk measurement tools, which became a key post-crisis priority in the context of the so-called 'macroprudential turn to regulation'.

The rationale for this case selection is two-fold. First, as mentioned, these valuation issues are fundamental to the functioning of financial markets. As these valuation issues form the core of financial markets, the empirical findings have practical relevance. Second, the cases differ in important ways. The institutional frameworks vary markedly. The International Accounting Standards Board (IASB), a private sector agency, is in the lead to design accounting standards; CRA-regulation and supervision is the prerogative of securities markets regulators; and banking regulators are responsible for designing capital and liquidity standards. The rules target different things: rating methodologies, the composition of banks' balance sheets, and the valuation of instruments on these balance sheets. And the actors directly affected are different: the Big Three

rating agencies (CRA-case), banks (liquidity and capital requirements), publicly listed companies (accounting case), and banking supervisors (macroprudential regulation). Despite this diversity, in each case the appreciation that market reflexivity hampers regulating valuation practices effectively, has a key influence on the governance process.

This broad focus in terms of valuation issues came at the expense of the geographical scope and the time-period studied. The focus has been mostly on the European Union (EU). Yet given EU rules' importance, both for EU Member States and countries outside the EU (Mügge 2014), this EU-focus can hardly be considered overly narrow. Moreover, as global rules are of key importance for the EU, I have (where relevant) also studied policy developments at global forums such as the Basel Committee on Banking Supervision (BCBS), the IASB, and the Financial Stability Board (FSB). I have focused mostly on the post-crisis period, while also paying attention to the decade leading up to the crisis. This time-frame allowed for studying how financial regulators already before the crisis dealt with financial valuation issues, and to what extent the crisis triggered fundamental reforms.

I have opted for a qualitative research approach, as this is most suitable for studying the links between valuation dilemmas, policy processes, and regulatory outcomes. A first step has been to identify precisely the most important valuation problems within a particular policy domain. I focused on seminal post-crisis reports that discussed how valuation routines contributed to the crisis. In addition, I analyzed in detail specialized reports and academic publications on the topic at hand, published before and after the crisis. This step was thus rather inductive. As a second step, I have linked these valuation dilemmas to the insights derived from the heterodox economics-literature and the social studies of finance-literature. Here the leading question was what the insights on financial reflexivity and valuation routines' performativity implied for these valuation issues. Crucially, I tried to distill their *regulatory* implications. This second step thus had a more deductive nature.

As a third step, I have studied to what extent these valuation problems played a role in policy debates, and how regulators have dealt with them. For this, I have analyzed reports on policy processes and the debates surrounding them. These policy debates and the policy preferences of different public and private actors were often well-documented. I could rely on news media reports, policymakers' and private actors' public statements on policy proposals, and proceedings of roundtables and policy debates. As a key goal of the research is to investigate the ways in which public and private actors deal with valuation dilemmas, I have also conducted semi-structured

interviews with representatives of the most relevant regulatory agencies and private actors. The purpose of these interviews was not to find the 'one and only' causal explanation for a specific policy outcome. Rather, the aim was to get a better understanding of public and private actors' understanding of the valuation problems, and their view on how these issues affected policy processes (I elaborately discuss case-selection and research methods in chapter 2).

1.5 Outline of the thesis

The thesis is structured as follows. In chapter 2, I present a more elaborate account of the theoretical and methodological issues addressed in this introductory chapter. In chapter 3, I discuss two decades of political clashes over the most appropriate measurement approach for financial instruments. From the 1980s onwards, banks transformed into capital market-oriented, global, and increasingly complex institutions. In response, accounting standard setters and banking regulators alike argued that accounting standards for financial instruments – the bulk of banks' balance sheets – needed a thorough update. Yet in twenty years no rule-set has emerged that was more than a temporary fix, to be succeeded by further reforms.

The chapter shows how banking regulators have been central to this dynamic and how their support for applying fair value accounting to financial instruments, the cornerstone of regulatory debate, has oscillated throughout the whole period. It argues that market reflexivity is at the heart of regulators' struggles with financial instrument accounting, as it implies that there is no standard that unequivocally promises to contribute to financial stability. In the absence of a fool-proof solution, regulators repeatedly find themselves torn between embracing a prescriptive standard to keep firms from cooking the books and allowing firms sufficient discretion to limit short-term instability. Accounting standards for financial instruments are therefore continuously work-in-progress.

Chapter 4 turns to the issue of credit ratings. Just as regulators already before the crisis grappled with financial instrument accounting, they also struggled with substantive issues pertaining to ratings. For example, they debated whether CRAs' methodologies should be subject to regulatory scrutiny and to what extent regulations should mandate private actors' reliance on ratings. Yet it took the financial crisis to truly convince policymakers that ratings can contribute to systemic stability risks. Assessing post-crisis regulatory reforms, however, we mainly see progress in tackling CRAs' integrity problems. In contrast, progress is more limited on tackling ratings' substantive problems: CRAs' flawed methodologies, the homogeneity of their ratings, and

widespread reliance on them. While these problems were arguably at the heart of the rating debacle, regulators have apparently failed to do something about them.

I argue that rating performativity is at the heart of the regulatory problem with ratings: ratings influence the risks that they supposedly merely describe. Regulation cannot remedy rating performativity's detrimental effects. So, replacing ratings in regulation with another risk indicator might merely displace rather than remove the source of systemic risk. More fundamentally, performativity implies that bold regulatory actions might make problems worse: standardizing methodologies, or setting up a public CRA, risk stimulating a homogeneity in risk assessments that regulators want to prevent. Just as in the accounting case: identifying the valuation problem is one thing, tackling the problem in a meaningful way is far from straightforward.

In chapter 5, I use the empirical findings of previous chapters to make a more general point about why post-crisis reforms appear to be rather limited. Many IPE-studies relate this lack of progress to regulatory capture: post-crisis reform attempts were led astray by vested interests. I contest the capture account's underlying assumption: regulators *know* which rules would promote the public interest – irrespective of whether they eventually *adopt* them or not. I argue that while many pre-crisis valuation approaches were clearly inadequate and indeed contributed to the financial crisis, it is much less clear what valuation approaches should replace them. The problem is that neither a hands-off approach to valuation routines, nor an interventionist stance promises to be effective in limiting financial instability. This conundrum is ultimately rooted in market reflexivity. Apart from presenting additional empirical findings on the regulation of accounting standards and credit ratings, I also discuss how this dilemma hampered the implementation of coherent bank liquidity standards.

Chapter 6 discusses the extent to which post-crisis macroprudential reforms have lived up to the high hopes. A macroprudential approach to financial regulation implies that rules aim to limit systemic risks, rather than merely risks for individual financial institutions. I argue that the reforms are not the 'paradigm shift' that many commentators argued it would be. Macroprudential regulation is best understood as a policy add-on. Supervisors can increase rule-stringency through ad-hoc discretionary interventions, but their ambitions are modest: rather than preventing instability, macroprudential policy aims to increase financial firms' resilience to be able to better cope with stress.

The chapter points to factors internal to the macroprudential approach as key to understanding the limited reforms. There are fundamental obstacles to measuring and mitigating systemic risks;

obstacles rooted in the endogenous nature of instability. An ambitious but ill-designed macroprudential policy framework could make things worse, policymakers feared. There are hard limits to what regulators can do to tame the cycle, tempering policymakers' enthusiasm for sweeping reforms. Also attempts to address the underlying procyclicality of banks' risk assessment practices falter: as both cycle-sensitive and cycle-insensitive risk approaches can contribute to systemic risk, policymakers see no way out but to adopt half-baked reforms that are never fully satisfactory.

The final chapter contains a summary of my main findings. I also discuss in what ways these findings contribute to the broader IPE-literature on financial regulation. I then turn to the thesis' policy implications. I argue that financial reflexivity presents important limits on the governance of financial valuation, but that this should certainly not inspire nihilism. There are ways to embed market dynamism more explicitly in governance frameworks for financial valuation practices. In terms of policy processes, regulators should embrace dynamic regulation and frequently reassess regulatory instruments. In terms of substance, regulators should aim for sufficient heterogeneity in valuation practices, as this seems the best way to prevent valuation-induced herd behavior. But given inherent limitations, we also need to go beyond financial regulation to reassess non-financial actors' – households, corporations, and semi-public organizations – credit dependence. If the financial system is inherently unstable, it is imperative to make society less vulnerable to its boom-bust nature.