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The regulator's conundrum. How market reflexivity limits fundamental financial reform

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ABSTRACT

Financial firms' valuation approaches are key to financial market functioning. The financial crisis exposed fundamental faults in pre-crisis practices and the regulations that bolstered them. Critics pointed to reflexivity: financial markets have no solid anchor outside of market participants' assessments, which makes them inherently unstable. Reflexivity implies valuation techniques are performative: they shape rather than reflect risks. Critics thus called for root and branch reform: regulators needed to regain control over these valuation practices. In spite of a flurry of changes, progress on the reforms has been limited in precisely those domains where it seemed most necessary. We argue that this lack of progress does not persist in spite of market reflexivity, but because of it. Public prescriptiveness might mandate widespread use of deficient valuation routines, exacerbating their deleterious performative effects and implicating public authorities in future financial crises. In the regulator's conundrum, neither a hands-off approach to valuation approaches, nor an interventionist stance promises to be effective. Empirically, we show how reflexivity has obstructed fundamental reforms in the European Union in three key domains: credit ratings, liquidity regulation, and accounting standards. Market reflexivity itself is, therefore, crucial to understanding the limited regulatory reforms we have witnessed since the crisis.

KEYWORDS

Financial regulation; regulatory reform; financial crisis; credit rating agencies; liquidity regulation; accounting standards.

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1. INTRODUCTION

Financial markets traffic in futurology. When players in those markets price assets and liabilities, their valuation routines are shot through with assumptions about the future (Beckert, 2016): estimates of default probabilities, interest rates levels in the years to come, economic growth trajectories, foreign exchange movements, and so on. The possibility that firms' assessments are off the mark generates financial risk – and the crisis beginning in 2007 demonstrated just how badly things can go wrong.

In the run-up to the crisis, these routines had increasingly been handed to private actors, for example when Basel II allowed major banks to rely on their own risk models to calculate required capital (Tarullo, 2008) and also reinforced private credit rating agencies (CRAs) as arbiters of credit-worthiness (Kruck, 2011; Paudyn, 2013). Just like fair value accounting (FVA) (Botzem, 2013), which relied on markets to value assets and liabilities, these valuation routines proved destabilizing: optimism would feed strong valuations, which would buttress firms' confidence and thus encourage further lending and risk-taking. When markets turned in 2007, this seemingly virtuous circle turned into a vicious one (Crockett, 2008). Decentralized valuation approaches, in short, fueled pro-cyclicality and systemic risks (Baker, 2013).

The crash underscored that financial markets are reflexive, meaning that they have no solid anchor outside of market participants' assessments (Minsky, 2008 [1986]; Soros, 2008). This implied that valuation techniques are performative: they never just *estimate* market values or risks, but also *shape* them as they guide financial actors' decisions (MacKenzie, 2006). They not only missed the build-up of systemic vulnerability, but actively contributed to it (Financial Services Authority, 2009b). With this in mind, public authorities were expected to curb destabilizing practices by becoming much more prescriptive in valuation routines. Ideas included stricter rules for judging financial instruments' riskiness in capital and liquidity regulation, filtering out the pro-cyclical effects of accounting standards, or limiting the impact of flawed CRA methodologies (Brunnermeier et al., 2009; Sy, 2009; Warwick Commission, 2009).

Compared to the enormity of financial market failure, however, reforms have been limited (Helleiner, 2014). Crucially, public authorities have refused to take the lead on valuation routines. Accounting standards are little changed from before the crisis (Mügge and Stellinga, 2015), CRAs continue to decide on their own methodologies (Underhill, 2015), and banks' investment and funding decisions are still predominantly informed by their own risk models (Lall, 2012).

The most common explanation for this pattern has been regulatory capture: financial firms have bent regulation to their own advantage, compromising the public interest in financial stability along the way.

Such an argument builds on a long tradition of thought that depicts regulation as a tug of war between public authorities and private actors – which the latter eventually win, to the detriment of the general public (Stigler, 1971). If the appreciation of market reflexivity did not inspire radical changes, then apparently regulators placed private interest over and above the public good (Lall, 2012; Goldbach, 2015; Underhill, 2015).

We contest this account of post-crisis reforms and the underlying framing of regulatory politics more generally. While regulators' appreciation of financial market reflexivity had been cited as the key reason to expect drastic regulatory overhaul, we argue, in contrast, that it has had the opposite effect. Reflexivity inspires regulatory timidity, not boldness. We denote this dynamic as the *regulator's conundrum*: because valuation routines are inevitably performative – irrespective of whether they are public or private – regulators cannot simply regulate their potentially nefarious effects away. In fact, when they prescribe specific routines or offer official seals of approval for them, they may reinforce rather than mitigate systemic risks by enforcing herding among market participants and lulling them into a false sense of security.

Regulatory outcomes that look like evidence of capture at first glance may therefore be no such thing. When public authorities shy away from highly prescriptive rules and build in much leeway instead, that may indeed suit private actors. But it is also consistent with regulators being aware of reflexivity and the limits it imposes on public policy fixes for financial instability. Indeed, when there is clear evidence of such awareness, we find it to be a much more convincing explanation of regulatory restraint than the idea that private interests had blocked alternative policies that regulators knew to be in the public interest. The cautious measures should be seen as attempts to serve the public good, not as evidence that it has been sidelined.

We illustrate this argument empirically through three case-studies of post-crisis reform in the European Union (EU): (1) the regulation of credit rating methodologies; (2) the introduction of bank liquidity requirements; and (3) the modification of accounting standards for financial instruments. Valuation routines stand central in all these cases, but the regulatory domains differ in terms of the distribution of responsibilities, the actors involved, and the object of regulation. The main responsibility for rule development lies with securities markets regulators, banking regulators, and accounting standard setters, respectively. The private actors directly affected also differ: regulating rating methodologies predominantly affects the big American rating agencies, liquidity regulation is a direct concern for banks, while financial accounting standards are relevant to a much wider and heterogeneous range of actors. The themes are different: the first case is about how to calculate credit risk; the second about the composition of banks' balance sheets; and the third is about

how firms should value the instruments on these balance sheets. This diversity makes these cases suitable to illustrate the broad scope of our argument. Despite these differences, in each one the appreciation of market reflexivity – and of the attendant impossibility of regulating valuation practices effectively – has hampered reform.

The choice for European reform trajectories rather than American ones – the obvious alternative – is ultimately arbitrary. We hypothesize, but do not demonstrate here, that similar dynamics should feature in the American case, not least because of tight trans-Atlantic reform coordination. To establish the external validity of our argument, we have instead opted to examine the regulator's conundrum across the breadth of valuation-relevant regulation. Rather than presenting an exhaustive description of the relevant arenas and the political processes, we systematically describe the key valuation problems identified after the crisis, and then show how these have obstructed far-reaching regulatory reform.

The case studies build on an analysis of policy documents, private sector position papers, reporting in the specialized press, and the academic literature on finance and financial regulation. We also draw on (confidential) in-depth interviews in Madrid, London, Paris, Brussels, and Amsterdam. The 15 respondents include senior representatives of EU securities markets regulators, banking regulators, CRAs, and the EU banking sector (see Supplementary material for an overview).

2. HIGH HOPES, UNMET EXPECTATIONS

2.1. The crisis of valuation and risk management

Firms' valuation practices are key to financial market functioning. They come in two basic guises: risk assessment, and assigning monetary values to assets and liabilities (valuation in the narrow sense). Risk assessment means putting probabilities on 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 prevail. 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.

The importance of these practices explains their centrality in regulatory politics. Issues such as the regulatory reliance on banks' or CRAs' risk estimates and the scope of FVA had been subject of much controversy well before the crisis (André et al., 2009; Kruck, 2011; Tarullo, 2008). It took the financial crisis itself, however, to demonstrate the real-world impact of state-of-the-art market practices (Mügge, 2013; Power, 2009). The British Financial Services Authority (FSA, 2009b) criticized a

misplaced reliance on sophisticated mathematical techniques, such as value-at-risk based methodologies. Others questioned the widespread reliance on market-based risk indicators such as credit default swap spreads, warning that such 'trust in the market' was misguided (Warwick Commission, 2009).

Fundamentally, critics pointed out that financial markets are reflexive. This means that the system changes under observation: market participants' ideas about (other participants' ideas about) the functioning of the system shapes their behavior and thereby affect the system's functioning. It has no solid anchor outside of market participants' assessments (Mügge and Perry, 2014; Sinclair, 2010; Soros, 2008). The systemic consequences of reflexivity were already recognized and described by Keynes (1964 [1936]) and famously picked up by Minsky (2008 [1986]): systemic risks are endogenous to financial markets. Optimistic assessments are self-enforcing when they stimulate investment and drive up asset prices. This feedback loop raises the fragility of the system even though it appears increasingly stable (Borio et al., 2012). A relatively minor event, for example a corporate failure or an interest rate increase, can be a breaking point and turn a boom into a bust (Gerding, 2014).

Market reflexivity has particularly pressing implications for our understanding of financial risks and values: it implies that they are not given, waiting to be accurately measured, because measurement itself changes them (Paudyn, 2013; Persaud, 2015). The problem was, therefore, not that firms' valuation practices were 'off the mark', but rather that they themselves were a key driver of market prices and risks – that they were, in a word, performative (MacKenzie, 2006). For our purposes, performativity, therefore, is a specific facet of market reflexivity more generally: it specifically concerns formalized routines and models that purport to assess or observe markets but shape them instead; it could be understood as a form of hard-wired reflexivity.

Performativity has posed a special challenge to reliance on *decentralized* valuation routines. Individual firms treat values and risks as independent from their actions (so, as exogenous), often relying on indicators of recent market trends in their assessments (BIS, 2008). But in a micro-macro paradox, individually sensible behavior can feed systemic risks (Baker, 2013; Danielsson, 2013; FSA, 2009b). FVA has allowed firms to record rising asset prices as profit, further stimulating balance sheet expansions and asset price rises (Mügge and Stellinga, 2015). The credit ratings that labeled structured finance instruments as 'safe' have shaped the risks they purportedly assessed, belying their ambition to objectivity (Paudyn, 2013). Value-at-risk models have done the same (Lockwood, 2015). In short, the performative effects of pre-crisis tools were particularly nefarious: decentralized risk assessments put market reflexivity in overdrive, as it were.

Many academics as well as public and civil society actors have demanded much more heavy-handed public intervention as a result (Sarkozy, 2008; Soros, 2008; Stiglitz, 2010). Mere tweaking of existing rules would not suffice. After all, many flaws in valuation routines had been buffeted by pre-crisis regulation (Brunnermeier et al., 2009; Warwick Commission, 2009). Therefore, faulty credit ratings for complex financial products suggested that public authorities should introduce quality checks for rating methodologies (Sy, 2009) or even start doing the rating themselves through some kind of public rating agency (Bofinger, 2009). And banks' pre-crisis risk models, that apparently contributed to pro-cyclicality by allowing them to reduce capital requirements and underestimate liquidity risks during the boom, seemed to call for public authorities' prescription or intensified checking of risk-assessment procedures (Di Noia et al., 2009). The alternative to privately controlled valuation routines would be ones that are publicly monitored, mandated, or even executed.

Post-crisis reforms, however, have failed to meet the high reform hopes that the crisis had spawned. Regulators and supervisors have tightened many existing rules and introduced a flurry of new ones at the global, European, and national levels (European Commission, 2014; Pagliari, 2012b). They also strengthened the competences of many regulatory and supervisory agencies, think for example of the new European System of Financial Supervision. But reforms have fallen short of the expected fundamental transformation and have instead been incremental and half-hearted (Helleiner, 2014; Moschella and Tsingou, 2013). Crucially, precisely in those areas where reflexivity is the core issue, central weaknesses have not been tackled. Banks still have much discretion in risk weighting their own portfolios, never mind their apparent inability to do so well. Newly introduced liquidity rules fail to set hard standards for banks' investments in safe assets and their reliance on stable funding sources. Regulators have refrained from prescribing rating agencies' methodologies. Accounting standards for financial instruments still engender the danger of serious pro-cyclicality. So, especially in the domains where they seemed most necessary, reforms have failed to live up to expectations (Helleiner, 2014).

2.2. Regulatory capture: as skeptical assessment

Why have the obvious failings of financial regulation not generated more fundamental reform? The common answer is that big, internationally active financial firms succeeded to block, stall, or water down sweeping reforms (cf. Finance Watch, 2016; SOMO, 2016). Regulation fell victim to

regulatory capture and prioritized private benefits over the public interest – an assessment that we challenge with our focus on the regulator's conundrum, set out further below.

Many reform accounts take regulation that suits financial firms as evidence of regulatory capture. Sundry financial firms had reaped substantial material benefits from the pre-crisis regulatory approach and therefore preferred not straying too far from the status quo. While regulators (at the national or international level) set out to fix financial flaws by designing rules conducive to the public interest (roughly, rules that ensure financial stability), they were led astray by particularistic interests, so the argument (Goldbach, 2015; Helleiner, 2014; Underhill, 2015). *'By hijacking the negotiations [...], large international banks succeeded in minimizing their required levels of capital, with potentially disastrous consequences for the stability of the international financial system'* (Lall, 2012: 611).

Other scholars have nuanced this rather narrow capture account. Young (2012) argues that regulators frequently resist the vehement lobbying of big financial firms and adopt rules against their opposition. Moreover, struggles over financial regulation involve more actors than just big banks (Kastner, 2014; Pagliari and Young, 2014), implying that a *'multitude of participants within or outside finance are capable of exercising an influence that knocks the regulator off its original balance'* (Pagliari, 2012a: 9). Still others warn for tautological reasoning in capture accounts: regulatory reform always has distributive consequences, so that a search for 'winners' – subsequently identified as policy captors – is almost certain to succeed (Carpenter and Moss, 2012; McPhilemy, 2013).

While these accounts refine the capture line of argument, they share with it an assumption that we argue is unwarranted: that regulators would *know* which rules would promote the public interest – irrespective of whether they eventually *adopt* them or not. Both capture narratives and its criticisms suggest that after the crisis regulators had a clear idea of what rule-sets would fix finance. Applied to valuation practices, this implies that regulators – now aware of the systemic risks of decentralized valuation routines – were in the position to replace them with ones that they knew would contribute to the public interest. These rules, so the assumption, would fundamentally depart from pre-crisis ones: while reforms would likely harm financial firms' material interests, they would contribute to financial stability. If it were not for capture, regulators would have succeeded in fixing valuation flaws.

We contest this reading of regulatory politics. It is far from obvious that rule-sets starkly different from pre-crisis approaches would necessarily contribute to financial stability. While in retrospect the reliance on decentralized valuation routines was woefully inadequate, while in retrospect

the reliance on decentralized valuation routines was woefully inadequate, we should not automatically assume that obviously better alternatives were readily available but ignored. As Charles Goodhart (2009a: 11), not exactly a cheerleader of the pre-crisis regulatory approach, acknowledges:

Basel II and [International Financial Reporting Standards] were not introduced out of some perverse wish to destabilise the world's financial system, though they have, alas, played a supporting role in that outcome. Indeed Basel II incorporates best available current thinking on micro-prudential behaviour for individual banks, and 'mark-to-market' may have unfortunate systemic side effects, but [the alternatives] are generally (much) worse.

Crucially, alternative valuation approaches – such as those prescribed by regulators – also were not without shortcomings. For example, they could reinforce rather than mitigate herd behavior if they would all steer firms in the same direction. In other words, the alternatives were not clearly superior to pre-crisis approaches (Mügge, 2013).

Indeed, it is not obvious that on these issues public and private interests can be neatly separated. Sweeping reform measures that significantly affect financial firms' short-term profitability may unintentionally destabilize the financial sector when market circumstances are dire. Similarly, relaxing valuation rules in stressful times – as happened during the crisis with accounting standards – may be celebrated by firms, but it simultaneously bolsters short-term financial stability. Needless to say, such public dependence on the viability of financial firms is highly undesirable. It is a constituent dilemma of thoroughly financialized economies and the reality regulators confront when designing reforms (Mügge and Stellinga, 2015). It also implies, however, that what at first sight may look like capture in the sense outlined above may be no such thing.

3. THE REGULATOR'S CONUNDRUM

We argue that regulators may resist radical reform not because they neglect the public interest but because they fear that such reforms would hurt it. In essence, performativity makes it so difficult to design rules that are both very prescriptive and effective that regulators shrink away from them. Scholars cannot assume that these policy *outcomes* – if they are beneficial to (big) financial firms – are necessarily the result of capture. Instead, we have to take seriously the dilemmas that regulators face in assessing the pros and cons of different rule-sets.

The replacement of decentralized valuation practices with a much more prescriptive approach is hampered by what we identify as the *regulator's conundrum*: regulators cannot regulate away the performativity of valuation techniques. The regulatory question becomes which valuation techniques will ensure the least damaging performative effects, and there are no obvious answers. If private actors are unable to devise proper valuation techniques by themselves, why should we expect public actors to be able to mandate and prescribe them? Performativity is just as much of a problem for public authorities as it is for financial firms.

Indeed, performativity furnishes two potent arguments against too much public intervention. First, and most importantly, publicly mandated valuation techniques might worsen the problems they were meant to solve. Public authorities might hard-wire an inevitably faulty valuation procedure into policy and thereby force financial actors all in the same direction, especially in case of European or global policy. Arguably, that is what had happened when banks had been obliged to use credit ratings in the risk weighting of structured finance assets (Gelper and Gerding, 2016). Although potentially undesirable from a micro-prudential or 'level playing field' perspective, the fallibility of valuations would actually encourage a diversity of valuation approaches in the marketplace instead of publicly mandated homogeneity (Dánielsson, 2013).

Second, if valuation routines will necessarily have deleterious effects and public authorities have no reason to believe they will do a better job than private actors, they have no incentive to get their hands dirty, as it were. Mandating a particular valuation technique, or approving one devised by a private actor, implicates public actors when things go wrong – leading to reputational damage and (possibly) litigation risks. This problem has always dogged stress tests, and it ultimately is inescapable. Public actors have an incentive to steer clear of valuation routines themselves.

In light of these considerations, a capture perspective poorly fits the cases we discuss and is not convincing theoretically. It underappreciates how financial reflexivity and the associated performativity of valuation techniques prevent clear-cut solutions to regulatory challenges. Powerful interests frequently intervene as policymakers consider reform. But we contest the assumption that a translation of performativity into reforms would have come easy if only regulators had wanted. In our empirical cases we find that regulators face conundrums that hinder radical reforms – conundrums that are ultimately rooted in reflexivity itself. It generates the timid reforms that champions of reflexivity decry. We observe limited reforms not *despite* of reflexivity but *because* of it.

This argument generates several empirical expectations. Regulators face incentives to opt for half-baked solutions, which neither fully embrace nor fully reject public guidance over valuation routines. Solutions should often have a temporary character, either because they are designated as

temporary from the outset or turn out to be so through frequent policy reversals and backtracking by regulators. Finally, we expect regulators to defer implementation of crisis-induced reforms frequently, partly so as to gauge the unpredictable market impact of these rules, but more importantly simply to kick the regulatory can down the road.

These outcomes, of course, can still to some extent be congruent with capture accounts of post-crisis reforms. To adjudicate between performativity-induced caution and regulatory capture as explanations for outcomes we, therefore, delve into the rule substance and the policymaking process itself. If we find the kinds of regulatory dilemmas outlined above in policy domains, and also find clear signs of regulators being aware of them and, therefore, shying away from drastic reforms, we argue that the case is much stronger for performativity itself as the brake on policy reversals than a capture-induced neglect of the public interest. Regulators' acknowledgment of the significant risks of publicly prescribed valuation routines for financial market functioning would constitute proof that lack of substantial reforms is not necessarily due to regulators' unwillingness to fix valuation routines, but rather to their inability to do so.

4. THE REGULATOR'S CONUNDRUM IN PRACTICE

The empirical section of this paper illustrates these arguments for key valuation and risk assessment practices: CRAs' methodologies, banks' liquidity-risk assessments, and valuation approaches for financial instruments. While regulators address these practices in the context of broader regulatory frameworks – CRA regulation, bank liquidity requirements, and accounting regulation – these practices have been at the heart of the problem in these frameworks. Market reflexivity and the concomitant performativity problem limits regulators' ability to fix valuation problems in these regulatory domains. Each case study combines two elements: we first outline the regulator's conundrum in the domain in question and then demonstrate how it shaped regulatory dynamics in the EU.

4.1. Regulating credit rating agencies' methodologies

A credit rating is an indicator of the assessment of a CRA regarding the creditworthiness of a particular entity (such as a firm or a government) or a particular obligation (such as a structured finance security), expressed using a ranking system (Kruck, 2011). Ratings are meant to assess the probability of defaults or losses for investors. While the Big Three firms – Standard & Poor's, Moody's, and Fitch, together accounting for over 90% of the rating market – have different rating approaches, they share an emphasis on rating 'through-the-cycle' (TTC). This means that their ratings should reflect an entity's credit risk irrespective of the

state of the economic cycle, although in practice ratings do tend to be procyclical (Deb et al, 2011; Warwick Commission, 2009).

Ratings are about credit risks, and these are impossible to estimate with certainty. By definition, risk is about future occurrences, meaning it is always virtual: once problems materialize, we no longer speak about risk (Paudyn, 2013). More problematically, the ratings affect risks when market participants base investment decisions on them. Positive assessments trigger easy access to cheap credit, while downgrades can exacerbate the rating target's financial strains. This particularly applies to the ratings of the Big Three: as these are widely used (partly through inclusion in financial contracts and particular regulations), rating changes can have systemic effects (Sy, 2009). Although methodologies obviously differ in quality, no methodology is immune to the perils of performativity: ratings always affect and never just measure risks. A 'correct' rating methodology remains elusive.

Performativity thus imposes severe constraints on regulators. Because rating methodologies shape the rating outcomes, they clearly warrant regulatory attention. But why would regulators be better at identifying appropriate methodologies than CRAs? The essence of the regulator's conundrum is that intervention in rating methodologies could aggravate the problems it was meant to solve. The systemic effects of ratings hinge on the market dominance of the Big Three and their similar rating approaches. Prescribing particular methodologies could amplify this effect by homogenizing ratings even more. And public vetting of methodologies could suggest that they are somehow officially approved, further bolstering their importance.

These problems permeate post-crisis EU policy-making. Before then, CRAs were essentially unregulated. The European Commission had championed 'monitored self-regulation', in which the Committee of European Securities Regulators (CESR) would monitor CRA compliance with the IOSCO-Code of Conduct (European Commission, 2006). This code required CRAs to disclose some methodology-relevant information to investors, but the bar was so low that the Big Three were thought to comply with these requirements already (CESR, 2006; IOSCO, 2004). The 2006 Capital Requirements Directive required banking supervisors to assess some aspects of CRAs' methodologies before allowing banks to use their ratings in calculating capital requirements, yet the European Commission (2006) admitted that in practice this measure too fell short of regulating CRAs. The pre-crisis regulatory framework steered clear of rating methodologies and procedures (Hiss and Nagel, 2014; Interview 20160316).

When the biggest CRAs downgraded scores of structured finance securities in the summer of 2007, they sent shockwaves through the financial system and precipitated the crisis (Morris, 2008). Observers identified

market participants' overreliance on ratings, partly resulting from their inclusion in financial regulations, as a key problem (FSF, 2008). However, there had also been massive failures in the rating sector itself. Critics pointed to conflicts-of-interest problems, such as the issuer-pays model and the lack of 'firewalls' between the advisory and rating departments (Coffee, 2011; White, 2010). But the problems were not limited to CRAs' integrity, they argued; they cut to the heart of the rating agency business: methodologies.

The content of the methodologies – rating assumptions, models, and the weighting of different risk factors – had grave shortcomings (Deb et al., 2011; FSA, 2009a). CRAs lacked long-run data on default risks for structured finance products; they missed the deteriorating quality of the underlying asset pools; they failed to incorporate these products' exposure to systematic risk; they were too sanguine about the US housing market and correlations between defaults; and they erroneously supposed that risk probabilities followed a normal rather than a 'fat-tail' distribution (Committee on the Global Financial System, 2008). Moreover, as CRAs' through-the-cycle rating approach ensured a slow response to market developments, their eventual aggressive downgrades occurred when market tension was already very high (Partnoy, 2009). At the same time, CRAs lacked adequate procedures to develop, implement, review and disclose their methodologies. Investors were left to guess about the meaning of ratings, especially for structured finance products (Sy, 2009).

The crisis thus challenged the pre-crisis policy approach. While European authorities, like their US counterparts, recognized the need of reducing overreliance on ratings, they also resolved that they needed a regulatory framework for CRAs (Kruck, 2011). The adopted Regulation (CRA 1) arguably is rather intrusive, but the biggest changes were aimed at mitigating conflicts-of-interests by imposing higher governance standards (García Alcubilla and Ruiz del Pozo, 2012). Fixing rating methodologies proved thornier, although they were a focal point in negotiations on CRA 1. As acknowledged by a European securities market regulator involved in the process: *'methodology was the key issue, because at the end what goes out, the triple-A or double-B or whatever, comes from a certain methodology'* (Interview 20160408a).

At the same time, from the outset, it was unclear for regulators on which aspects they should focus. The EC consultation paper had been vague on the issue of regulatory scrutiny of methodologies: while it made clear that the proposed requirements *'do not interfere with the content of ratings'* (EC 2008: 3), it did not provide a similar provision for methodologies. This worried CRAs, who feared regulatory interference with their rating approaches (Interview 20160413a; Interview 20160422; Standard and Poor's, 2008). The eventual policy outcome – Article 23 of the Regulation contains an explicit provision to leave methodologies'

substance alone – could thus suggest CRAs captured regulators along the way and blocked unwelcome meddling. But this overlooks that EU regulators and supervisors themselves had from the start been deeply skeptical of vetting rating methodologies, let alone determining methodologies themselves (Interview 20160408a; Interview 20160421). For instance, CESR (2008: 3) argued that the *'goal for a potential regulation should be the supervision/monitoring of principles and processes that a CRA undertakes to generate a proper rating rather than influencing the methodology a CRA uses'* (cf. CEBS, 2008).

Several problems fed public authorities' opposition to interference with the rating methodologies, including insufficient regulatory expertise and major conflicts of interest (Interview 20160408a; Interview 20160404). But the substantive problems were most fundamental. In the words of the FSA (2009a: 171), *'there is no evidence to suggest that regulators would be more accurate in assessing the appropriateness of methodologies than the CRAs'*. Probabilities of future events are intractable. As an EU banking regulator frames it: *'the problem is always the same. You can check a methodology on ratings, which is about credit quality, which is something you cannot observe. Or not even test for the next cycle, of which we don't even know how long it is.... So all these things you cannot do with them'* (Interview 20160413b). Given the slim chance that substantive involvement would improve rating quality, it would at best shift reputational (and possibly litigation) risks towards the regulator, making it an unattractive policy option (Interview 20160408b).

The most fundamental problem, however, was that regulators' substantive involvement would not take away rating performativity. Vetting or prescribing methodologies would necessitate regulators to determine whether CRAs should adopt 'point-in-time' (PIT) rating approaches instead of the common TTC practice (cf. Partnoy, 2009). However, the performative effects of *both* approaches can be destabilizing: while the TTC approach leads to ratings that are slow to respond to market developments, the volatility of PIT-estimates means that this approach could also increase financial instability (Gonzales *et al.* 2004; Hunt, 2009). Moreover, if regulators prescribed rating methodologies, they would boost systemic risks: *'if the government is wrong, everybody is wrong'* (Interview 20160413b). Market participants could consider ratings as an 'official seal of approval', contributing to herd behavior.

While CRA 1 formally prevented regulators from substantive involvement in methodologies, this did not imply that CRAs were completely 'off the hook' – as capture accounts would suggest. Much to the chagrin of CRAs, Article 8 of CRA 1 introduced significant procedural requirements concerning the development, application, review, and disclosure of rating methodologies. A key clause – Article 8 (3) – would appear to tackle the *content* of methodologies: CRAs *'shall use methodologies that are*

rigorous, systematic, continuous and subject to validation based on historical experience, including back-testing'. This implied that the European Securities and Markets Authority (ESMA) – CESR's successor and the main CRA supervisor since the first revision of the Regulation (CRA 2) in 2011 – would have to check whether CRAs' methodologies conformed to Article 8 (3), without actually interfering with their content. But how this was to be done has been a key dilemma ever since.

The problem emerged when, during the Eurozone debt-crisis, the European Commission (2011: 3) proposed that when a CRA wants to modify its methodologies, *'[the] credit rating agency may only apply the new rating methodology after ESMA has confirmed the methodology's compliance with Article 8 (3)'*. ESMA itself, however, led the subsequent opposition to the proposal (Interview 20160421; Interview 20160422). Its chairman argued that

[m]oving to the new CRA3 has indeed the tension that we, as ESMA, become involved in the rating methodologies. There is clearly a tension there with the strong points of CRA1 and CRA2 that we should not interfere with the ratings themselves (House of Commons, 2012).

This provision would have *'led to a sort of regulators-approved rating. You would get a triple-A rating that was seen by investors as being in some way ESMA-approved. That is not something you want to have'* (Interview 20160421). The proposal was eventually shelved; instead, the second revision of the Regulation (CRA 3; 2013) did require CRAs to *notify* ESMA of material changes to their methodologies. Key members of the European Council had found the original proposal unworkable (Interview 20160404; Interview 20160408a).

Regulators have not created substantive requirements for CRAs' methodologies, but they do subject them to supervisory scrutiny. Where to draw the line proves difficult. As it is impossible to assess *ex ante* whether methodologies are 'correct' (cf. Paudyn 2013), ESMA checks whether CRAs apply their methodologies consistently and modify them in case of unexpectedly poor performance. This later aspect of 'methodology validation' is controversial. CRAs warn that this approach pushes them in the direction of quantitative rating approaches, which in their eyes contributes to rating homogeneity, thereby potentially boosting ratings' performative effects (Interview 20160414a). ESMA (2016: 11), however, denies that the rules oblige CRAs to *'automate their approach'* and cling to tighter standards for CRAs to check their own methodologies: rating agencies should assess whether default percentages in different categories match their earlier expectations; if they do not, methodologies should be reviewed. CRAs thus face tighter rules on their

methodologies – much to their chagrin (Moody's, 2016) – but supervisors know better than to become too closely involved in this domain.

Despite fundamental flaws of CRAs' pre-crisis methodologies, regulators have struggled to respond effectively. The new rules aspire to stringency on the procedural aspects of rating without regulators' becoming enmeshed in the actual methodologies. But in effect, that line is impossible to draw, and the rules remain contradictory. This policy outcome is certainly not clear evidence of CRAs successfully convincing regulators to adopt lenient rules that harm the public interest. Such a diagnosis would be hard to square with the overall regulatory backlash CRAs have seen since the crisis, and the fact that they have frequently but unsuccessfully opposed regulatory scrutiny of their methodologies (García Alcubilla and Ruiz del Pozo, 2012; Interview 20160421; Interview 20160422). More than anything, from the outset regulators have not been able to find a coherent solution: they know that substantive involvement can worsen ratings' systemic effects, but neither can they afford to leave it completely to the CRAs. The uneasy policy fixes reveal how performativity presented public authorities with a conundrum impossible to solve.

4.2. The designation of 'low-risk assets' in liquidity regulation

Regulators dread markets grinding to a halt in periods of stress. As illiquidity and insolvency can be indistinguishable in crises, they want banks to hold assets that are low-risk and highly liquid, for example bonds of 'financially sound' governments or firms. This should reduce banks' liquidity risks, commonly defined as the risk of not being able to sell particular assets without substantially affecting their price (market liquidity risk) or not being able to roll-over debt obligations (funding liquidity risk).

The safety of an asset, however, does not reside in the financial contract itself. There is an inevitable circularity: an asset *perceived* as liquid will be demanded for its liquidity characteristics, which increases its liquidity – and the other way around (Crockett, 2008). Assets' liquidity furthermore hinges on market conditions and the counterparty's soundness and safety net (Gelpern and Gerding, 2016; Warwick Commission, 2009). Hence, what matters is whether *other* actors stand ready to buy the asset. The Banque de France (2008) calls this '*the fundamental endogeneity of liquidity, which depends on confidence, i.e. the ability of depositors, institutions, and market participants to take risks on each other*'. The safety of assets can change dramatically as market participants depend on collective guesses of each other's soundness.

Market reflexivity is at the root of liquidity's endogeneity. The concomitant regulator's conundrum will obstruct regulators in their attempts to

ensure banks have sufficient liquid assets to weather financial stress. When they attempt to safeguard individual institutions by pushing them into 'liquid' asset classes, they may aggravate the problems they intended to solve. Firms may shed assets falling outside of regulators' definition of liquid assets and thereby contribute to market liquidity risk. In addition, firms' overcrowding in asset categories defined as safe may unwittingly erode their safety and liquidity over time (Gelpern and Gerding, 2016; cf. Minsky, 2008 [1986]; Soros 2008). The spectacular failure of AAA-rated mortgage backed securities (MBS) during the crisis is a case in point. Favorable regulatory treatment had made MBS popular, but rampant demand unhinged the whole market segment, and a collective sell-off of these instruments during the crisis made them illiquid (Gerding, 2014).

So, although regulators want firms to reserve a proportion of their balance sheets for so-called High Quality Liquid Assets (HQLAs), regulatory labeling of 'low-risk' assets is far from innocent. On the one hand, a meaningful HQLA-category needs to be restrictive. On the other hand, such restrictiveness can be counterproductive because it reduces liquidity when it is most needed. This dilemma has hampered the post-crisis development of liquidity requirements. Regulators are torn between restrictive rules to tackle insufficient liquidity in crisis times and lax rules to undo the perverse consequences of strict rules: a collective scramble for the limited pool of officially designated HQLAs.

Liquidity standards were peripheral to advanced economies' pre-crisis regulatory frameworks. In the Basel Accords of 1988 (Basel I) and 2004 (Basel II), regulators concentrated on banks' capital. Although the Basel Committee on Banking Supervision (BCBS) had considered developing liquidity rules as well, it ultimately deemed them unnecessary. Capital requirements would suffice to safeguard solvency, and solvent institutions would be resilient and could always refinance themselves through the many channels available. Regulators discounted the possibility of complete market freezes when all firms attempted to improve their liquidity position simultaneously (Bonner and Hilbers, 2014; Goodhart, 2011).

The crisis trashed that view. Highly rated MBS became illiquid when mortgage defaults started to increase. Banks struggled to borrow money, even short term, as lenders fretted about the value of the collateral that banks could pledge (Kowalik, 2013). Micro prudence turned into macro disaster: individual banks expected continued access to cheap refinancing, but their collective reliance led to systemic meltdown (Brunnermeier et al., 2009). As these problems pertained to banks' general funding structure and their ability to sell assets if necessary, it was also clear that the scope of the existing capital adequacy framework was too narrow (Goodhart, 2009b).

In response, the BCBS included liquidity standards in Basel III (2010). The Net Stable Funding Ratio should limit maturity mismatches between assets and liabilities. More importantly here, the Liquidity Coverage Ratio (LCR) was to ensure banks would have enough liquid assets to weather short-term stress: HQLAs should cover net outflows during a 30-day period of stress. In spite of the attractiveness of the idea, the devil was in the detail. What would count as HQLAs? What was a 'likely' outflow in 30 days? And would banks be (temporarily) allowed to miss the minimum LCR in times of actual stress? Once again the question was to what degree public authorities would prescribe detailed answers, rather than letting banks figure out the details themselves.

The BCBS (2010) initially proposed a rather strict framework. It suggested a narrow definition of HQLAs, incorporating cash and central bank reserves, government bonds with risk weights of 0% and 20%, and highly rated corporate bonds. Outflow assumptions were rather drastic, assuming that banks would completely lose access to interbank markets. And banks were forbidden to sink below the minimum LCR no matter what (Bonner and Hilbers, 2014).

At the same time, the BCBS deferred implementation until 2015 to create an observation period and allow modifications. These changes were presented in January 2013, and they were substantial. LCR implementation was delayed until 2019, the HQLA-definition was loosened, outflow assumptions (particularly regarding interbank markets) were softened, and banks were allowed to miss the ratio temporarily (Gomes and Wilkins, 2013; Kowalik, 2013; Masters, 2013). What made the BCBS change its mind?

Capture accounts would highlight successful lobbying of banks, who had criticized the measures as overly stringent (Interview 20160603; Masters and Murphy, 2011). But while bankers' concerns were certainly recognized, the regulatory problems ran far deeper. Regulators had from the start feared the unintended consequences of a stringent LCR proposal – indeed, this was the core reason for creating the observation period (BCBS, 2010; Caruana, 2011; Gomes and Wilkins, 2013).

Throughout the process, regulators struggled with the HQLA-definition. Although a narrow definition is clearly desirable – lest liquidity requirements become meaningless – the unintended consequences are potentially dire, and ultimately inescapable. The IMF fretted that a narrow definition could trigger a deleterious scramble for 'safe' assets: unless funding patterns substantially shifted, banks' potential need for qualifying assets would have been \$2–\$4 trillion, far above the already high post-crisis demand for them (IMF, 2012). Banks would be incentivized to hold similar portfolios, creating more homogeneity and systemic risk while displacing liquidity risks to other corners of the financial sector (Wagner, 2013). *'A too-stringent set of rules may force banks to take similar*

actions to reach compliance, resulting in high correlation across certain types of assets and concentrations in some of them', the IMF (2011) feared.

A strict definition of HQLAs could also prove destabilizing during market stress: banks might collectively attempt to shed assets falling outside of the HQLA-category, effectively increasing systemic market liquidity risks. And liquidity of included assets could be *reduced* as firms would accumulate rather than trade them (IMF, 2011, 2012; Kowalik, 2013). Hence, broadening the HQLA-category, even if undesirable from a micro-prudential perspective, made perfect sense from a systemic one.

The problems of a narrow HQLA-definition would be exacerbated by a fixed minimum ratio. Regulators had always doubted the desirability thereof: while (again) it makes sense from a micro-perspective, it could have deleterious effects at the aggregate level. The BIS (2008: 8) itself already noted that *'time- and cycle-invariant minimum liquidity requirements, especially if they take the form of hard constraints, can exacerbate procyclicality: when they are hit, or even approached, they cease to act as buffers'*. In their determination to stay above minimum requirements, banks would hoard liquid assets, thereby increasing market stress (cf. Goodhart, 2013). The BCBS' response was not simply to abandon the quest to impose minimum requirements: instead, it required banks to stay above the minimum in normal circumstances, but emphasized that *'during periods of stress, it would be entirely appropriate for banks to use their stock of HQLA, thereby falling below the minimum'* (BCBS, 2013).

The LCR revision also reflected banks' structural importance for the economy at large, necessitating regulatory caution. Opting for a stepwise implementation – requiring banks to gradually build up their stock of HQLA and modify their funding structure accordingly – reflected regulators' fear that too rapid a transition would have significant pro-cyclical effects (Masters and Nasipour, 2013). Finally, softening outflow-assumptions on some (but certainly not all) intra-financial liabilities were primarily to limit central bankers' concerns. Several key monetary policymakers feared too stringent a standard would clog interbank markets, thereby not only increasing banks' high dependence on central bank liquidity support, but also harm monetary policy's transmission effects (Cœuré, 2012; Gomes and Wilkins, 2013; Noyer, 2012).

While softening the rules met banks' concerns, especially those in France and Germany (Howarth and Quaglia, 2013), regulators were not merely favoring private over public interests. Regulators' first impulse to introduce tighter rules makes sense, but soon thereafter they themselves offered all the right reasons why such stringency might be counterproductive: it could trigger the market distress that regulators sought to avoid. Banks did not simply get their way against the preferences of the regulators, inspired by the wish for financial stability. Regulators

themselves realized how the original, stringent proposals could undermine stability and – without a better alternative – opted for the laxer route.

4.3. Limiting market-value accounting

Up to this day, there is no consistent, let alone universally agreed, valuation technique for financial instruments. The main approaches – fair value accounting (FVA) and historical cost accounting (HCA) – have both benefits and drawbacks. For banking regulators, the central question is which approach would bolster financial stability – and there is no clear-cut answer.

Proponents of FVA argue that the current market price of any asset or liability is the best value-estimate we have given that it integrates assessments of a wide variety of observers. While banking regulators see merit in this argument, they simultaneously fear that this 'marking-to-market' can increase volatility in firms' income statements, feed herd behavior and generate pro-cyclicality (Akerlof and Shiller, 2009; Enria et al., 2004). As argued by Turner (2010), then chairman of the FSA, *'a fully transparent system of across the board mark-to-market accounting could simply increase the speed with which self-reinforcing assumptions about appropriate value generate cycles of irrational exuberance and then despair'*. Also, the application of FVA to a bank's whole balance sheet, including its liabilities, has counter-intuitive effects: a bank in trouble would be allowed to record its liabilities at a discount and, in an extreme scenario, post a profit (ECB, 2004).

HCA records assets and liabilities at acquisition prices and does not update banks' books to reflect current market conditions. Regulators like HCA for being less volatile than FVA, but they have mixed feelings about other aspects. In an economic downturn, it may hide troubles at financial institutions: while this can limit short-term instability, it may make long-term problems much worse. Derivatives have exacerbated HCA's shortcomings, as the original cost of a derivative can be a fraction of the ultimate liability. HCA then becomes a poor guide to banks' viability (ECB, 2004). A mixture for FVA and HCA is no panacea, either. Valuing assets and liabilities through different standards contravenes the match between them that defines banks' risk management (BCBS, 2000).

As in our other cases, the performativity of valuation practices is the root of the problem. Accounting standards not only provide a snapshot of corporate activity but influence that activity itself: the negative effects of any approach will strengthen the case for switching to its alternative. So even if mark-to-market valuation is a problem for financial stability, that does not make HCA the obvious long-term solution. This implies that that there is no accounting standard for financial instruments that can count on unequivocal support from banking regulators. In practice,

we see policymakers adopting half-baked standards that mix both approaches. Once a particular standard is witnessed to exacerbate problems, policymakers are forced to alter it. Crafting a coherent, durable standard proves elusive.

In the EU, the subprime crisis roughly coincided with the implementation of International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), a private sector organization. Even before then, the IASB's standard on financial instruments, IAS 39, generated conflict between the IASB and EU authorities. While IAS 39 mixed FVA and HCA, FVA would apply to a significant chunk of financial instruments. As European banks – whether from the UK, France, or Germany – had become more active in financial market activities (derivatives trading, market making, etc.), they feared IAS 39 would increase income volatility. Regulators welcomed the transparency FVA would bring, but feared that an unchecked expansion would harm financial stability (ECB, 2004). They, therefore, asked the IASB to allow firms more flexibility in recognizing value changes for financial instruments; the IASB countered that flexibility would leave firms too much leeway to hide mounting problems. Locked into controversy, the EU simply 'carved out' IAS 39 in 2005: it deleted unwanted rule sections to shield firms from market fluctuations (Mattli and Büthe, 2005; Perry and Nölke, 2006). But this was not simply regulators doing what banks told them to do: contrary to banks' wishes, the carve out included rule-sections that would give firms excessive discretion in opportunistically marking-to-market particular financial instruments (Mügge and Stellinga, 2015).

The crisis again pushed FVA into the limelight. When market liquidity evaporated, 'fair values' of complex financial instruments proved elusive. Critics added that FVA aggravated the crisis by forcing banks to translate value-changes directly into losses, triggering collective fire-sales and contributing to collapsing asset prices. Capital adequacy rules amplified this: losses would erode equity buffers, necessitating banks to raise new capital, reduce lending activities, or sell yet more assets. All three strategies were disadvantageous in an economically depressed context (cf. Committee on the Global Financial System, 2009).

After Lehman Brothers collapsed in September 2008, public authorities tried to limit firms' exposure to disintegrating markets (Schwarz et al, 2014: 18). EU member states advocated reclassifying assets into categories that did not require market-based valuations to give banks 'breathing space'. The EU pushed the IASB to modify its rules, threatening yet another carve-out. In October 2008, without due process, the IASB relented and suspended market-based valuations for many assets (André et al, 2009; Stellinga, 2014). It thereby allowed tens of billion euros in EU banking losses to go unrecognized in 2008 alone (CESR, 2009). At least in the short term, this solution offered troubled banks some relief, thereby

also limiting market instability to some extent. But for regulators it was a mixed blessing: down the road, the hidden losses could come back with a vengeance. As critics argued, *'one of the few things worse than mark-to-market accounting is allowing it in booms and suspending it in periods of market decline'* (Brunnermeier et al., 2009: 41).

Both banking regulators and accounting standard setters therefore argued that a more durable solution was necessary. The IASB promised a whole new standard for financial instruments, and the old debates duly resurfaced: how should financial instruments be measured, and who should decide when banks could switch between valuation methods? The IASB gave up its long-standing push for full FVA in July 2009 and announced that *'measuring all financial assets and financial liabilities at fair value is not the most appropriate approach to improving the financial reporting for financial instruments'* (IASB, 2009a: BC13). A standard mixing FVA and HCA was now no longer presented as a temporary inconvenience, but as a long-term solution.

The BCBS, however, had shifted from cautious FVA support to skepticism, warning that the new approach *'should not result in an expansion of fair value accounting'* (BCBS, 2009: 1). The proposed standard (IFRS 9) would make fair value a *'default category'*, and *'may lead to more financial instruments being measured at fair value [...] as the conditions for the amortised cost category [the alternative approach] are overly restrictive'* (BCBS, 2009: 3). Banking regulators also felt that banks should retain some flexibility to switch between standards *'when economic events cause markets to become dislocated and an entity's management responds to this dislocation by changing its business model'* (BCBS, 2009: 9).

Although banks had also pleaded for more flexibility (cf. European Banking Federation, 2009), we should not mistake the BCBS' proposals for evidence that it was merely doing the banks' bidding. Fearing the manipulation of flexibility, it warned that the *'business model concept should be carefully defined by the IASB (...) to avoid abuse'* (BCBS, 2009: 3). Regarding reclassification, it forcefully argued that

[any] reclassification should be irrevocable and should be done in rare circumstances only. As the reclassification of a financial instrument can have a significant effect on the financial statements, it is important that such assessments are not made on an instrument-by-instrument basis and that comprehensive disclosures are provided to users (BCBS, 2009: 9).

Regulators' inability to endorse specific standards or an unambiguous rule for switching between them demonstrates the conundrum they faced: what would be an appropriate valuation technique for financial instruments? Stringent standards may undermine financial stability if

they push banks over the brink in times of distress; overly lenient ones may allow them to cook the books.

In response, the IASB (2009b) issued a new proposal that basically followed the banking regulators' requests, allowing reclassification when a firm changed its business model (IASB, 2009b: A268), thereby displacing the valuation problem rather than solving it. IASB's chairman Hoogervorst (2011) later defended this approach by claiming that *'the IASB has always remained pragmatic about which measurement techniques to adopt'*, forgetting its pre-crisis push for a full fair value standard. *'We know there is no one right answer'*, he now admitted.

EU authorities welcomed this pragmatic approach, but to the chagrin of investor representatives and accounting standard setters the EU refused to adopt the new standard (Tait and Sanderson, 2009). The European Commission still wondered whether new rules would unduly expand FVA, and banking regulators first wanted to assess other, yet to be finalized aspects of the standard (European Commission, 2009). Critics highlighted additional reasons: adopting IFRS 9 could undo the effects of the ad hoc IAS 39 modification as many instruments would have to return to the fair value category. Without the old flexibility, many banks would finally have to declare hitherto unrecognized losses (Tait and Sanderson, 2009).

The IASB has struggled to craft a durable standard for financial instruments. Instead of 2010, it finished work in 2014, with mandatory application postponed until 2018. As European regulators flagged no major problems with the latest version of IFRS 9 (cf. EBA, 2015), the EU has recently chosen to endorse it, albeit with renewed caveats (EC, 2016). But their satisfaction may prove temporary, because the underlying problem remains unsolved: both ignoring and reflecting changing market circumstances in firms' accounts can undermine financial stability. Backed by banking regulators, the IASB has tried to limit the scope for abuse, but regulators will be hard-pressed to refuse firms 'breathing space' when markets turn. Past experience would therefore suggest this is not the last word in the FVA-HCA saga.

Regulators' enduring prevarication on financial accounting standards contradicts an excessive influence of private interests over rule setting: the ultimate standards were not nearly flexible as banks had hoped. If regulators repeatedly found themselves on the same side of the argument as the banks, they also forcefully opposed bankers' pleas for flexibility when they feared for financial stability. Instead, the pragmatic standard we have now betrays regulators' inability to solve the accounting conundrum caused by market reflexivity. As any standard that fixes short-term problems can aggravate market instability down the road, the goal of a stringent and coherent standard for financial instruments remains elusive.

5. CONCLUSIONS

Why, despite the fundamental valuation and risk management problems that the financial crisis exposed, have we seen only limited regulatory reforms? Rather than taking firm control, public authorities have struggled with regulatory responses, frequently backtracked on earlier decisions, or adopted half-baked solutions. In our cases, these dynamics are not the results of particularistic interests hijacking public policy – which would have implied that regulators knew which rules would promote the public good but chose to favor private interests instead. Instead, the intractability of financial valuation has precluded convincing answers. These valuation problems spawn financial instability, herd behavior, the endogenous build-up of systemic risks, and periodic crashes, and they persist even if public actors assume responsibility for determining valuation approaches. In fact, the performative effects of publicly prescribed approaches could be worse than their predecessors.

This conclusion is sobering, as it points to the inherent limits of governing reflexive financial markets. It adds a governance component to the Minskyan insight that financial stability, by inviting overconfidence, breeds instability (Minsky, 2008 [1986]). Our analysis shows that financial regulation offers no easy answers. Public authorities confront the valuation problems just as much as private actors do. Publicly mandated optimism, for example in the form of favorable risk ratings for sovereign debt in banking regulation, can be just as pernicious as private sector herding.

We see our contribution as an encouragement to scholars of financial governance to engage more directly with the *substantive* aspects of finance (cf. Mügge and Perry 2014). Capture accounts often treat regulatory controversies as a distraction from the *real* issues at stake, namely the material interest of the stakeholders. Scholars then compare initial regulatory preferences to eventual regulatory outcomes to determine who ‘won’ the regulatory competition (cf. Carpenter and Moss, 2012). We argue instead that we should dive into the controversies and debates that occurred in the policy process and not only treat them as a smoke-screen. Policy problems may show a much greater resistance to effective solutions than we often assume.

Two aspects deserve particular attention. First, in today’s financialized economies, public and private interests are not easily separated. When restrictive measures would seriously harm financial firms, they may well undermine the public good along the way. Scholars thus need to pry open the issues at stake, to be in a better position to ascertain when policy outcomes that benefit private financial firms are clear examples of regulatory capture and when these are in fact the best regulators could do, given the circumstances (cf. Pagliari, 2012a). This in turn necessitates an

analytical focus not merely on policy outcomes but also on the processes leading to them (cf. Carpenter and Moss, 2012).

Second, and related, it also requires a different perspective on (international) financial regulators themselves. In the scholarly literature, they are often treated as mere vectors of competing interests (such as national governments or private sector stakeholders), not having any agency themselves. In other instances, regulators are treated as independent agents, but they are attributed the ability to know precisely the (future) real-world effects of different rule-sets (for example, Singer 2007). In both instances, regulators' substantive dilemmas are assumed to be absent or trivial. We argue, instead, that International Political Economy-scholars need to treat regulators as agents who are confronted with an ambiguous link between rule-sets and public interests. We have to take seriously the genuine puzzling in the regulatory community: controversy and disagreement about the appropriateness of different rule-sets, as well as the limits to what regulators can do to fix finance.

Does that make financial regulation a futile exercise? Not quite. Politicians, regulators, firms and the wider public should indeed be much more cognizant of the limits of financial regulation. If regulators' mandate is to craft rules that ensure financial stability once and for all, they cannot but fail. It is unrealistic to hold them to that standard, and regulators should dismiss the illusion that such a fix is attainable. Instead, they should embrace dynamic regulation and frequently reassess regulatory instruments and their setting in light of market developments. It remains unpredictable how financial actors will react to rule changes, so we cannot map out those courses in advance. Like it or not, regulators have to fly by sight rather than on auto-pilot. Our plea for continuously adaptable rules may irk financial firms who complain about regulatory fatigue and prefer a predictable rule-framework. But we must expect rules and instruments to shape financial markets in unpredictable ways and often with undesirable consequences. This implies that dynamic regulation is without alternative (Gerding, 2014).

When policy requires continual adaptation, full harmonization of financial valuation practices may be counterproductive (Warwick Commission, 2009). Although it figures in the EU's 'level playing field' agenda and makes sense from a micro-prudential perspective, homogenous risk assessment procedures can amplify systemic risk. When everyone reacts similarly to shocks, price movements are amplified (Danielsson, 2013). In some domains regulators already abandon the quest for one-size-fits-all solutions by embracing pragmatic policy solutions: the new accounting standard for financial instruments is a case in point. Rather than seeing such solutions as temporary aberrations, regulators should accept highly diverse valuation approaches (Romano, 2014).

The limits of regulation highlight implications that go beyond regulatory policy itself. Instability is inherent to financial markets. When we strive to curb the damage it can do, the more effective, if more difficult, route forward is to diminish the vulnerability of our economy and society to the vagaries of financial markets (cf. Mügge and Perry, 2014). For decades on end, finance has become increasingly dominant – for firms, households, and governments alike. Relegating finance to a less central role in society will have to be part of a quest to crisis-proof our economies. The core challenge is to build a less credit-intensive society. The loan-to-value limits that many EU countries introduced are a step in the right direction. Similarly, the current bias in tax regimes to favor debt finance over equity should over time be eliminated (OECD, 2015). While these measures surely have distributional consequences in the short run – and policy-makers should address these – fighting our debt-addiction has the potential of both reducing the potential severity of financial turmoil as well as protecting society from a debt-overhang when markets inevitably turn (Turner, 2015).

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