

The regulator's conundrum.

How financial reflexivity feeds arm's-length regulation

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ABSTRACT

The financial crisis exposed fundamental faults in global finance and its regulation. Critics pointed to the problem of ‘market reflexivity’: financial firms’ valuation techniques and risk assessments engender volatility and frequent crises. They called for a root and branch reform: regulators needed to regain control over these valuation practices. In spite of a flurry of changes, progress on the post-crisis 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. Publicly mandated valuation techniques do not necessarily perform better than those devised by private market actors. Public prescriptiveness might mandate widespread use of deficient valuation routines, exacerbating reflexivity and implicating public authorities in future financial crises. In the regulator’s conundrum, neither a hands-off approach to valuation and risk management, nor an interventionist stance promises to be effective. Empirically, we show how reflexivity 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

European Union; expert networks; financial regulation; credit rating agencies; liquidity regulation; accounting standards

1 Introduction

After years of frenzied reform debates after the financial crisis, regulatory politics on both sides of the Atlantic has calmed down again. The incremental tackling of issues as they arise has largely supplanted schemes for root and branch regulatory overhaul. Yet it is easy to forget just how fundamental the faults were that observers had identified in global finance and its regulation (cf. Morris, 2008). Uncertainty about the value and riskiness of financial instruments and, by implication, about the viability of the global financial system were at the core of market meltdown. The crisis demonstrated that financial markets are reflexive, or self-referential (Soros, 2008). Market participants' financial valuation techniques, including risk management, never just *estimate* market values or risks. They also *shape* them when they guide financial actors' decisions. This feedback loop accounts for financial markets' inherent instability: market participants' optimistic risk assessments become self-confirming as they translate into higher investment, rising asset values and increased profits – until the upswing hits a limit and goes into reverse. More precise or sophisticated valuation techniques offer no solace as this reflexivity penetrates financial markets all the way down.

Appreciation of reflexivity eroded faith in an assumed self-correcting capacity of markets. Herding and bubbles were not aberrations in otherwise benign market dynamics but inherent to their functioning. Reflexivity thus became a key argument for heavy-handed public intervention in financial markets. If markets could no longer be trusted to correct themselves, regulators had to climb back into the driver's seat – for example through prescriptive rules for credit rating agencies, tougher capital requirements, better accounting standards, stringent rules for derivative issuance and trading, and so on. Regulators needed to regain control over financial valuation and risk management practices after financial firms had failed to develop accurate and prudent approaches.

By that standard, post-crisis reforms around the world have been modest at best (Helleiner, 2014). In spite of a flurry of changes, neither in the United States nor in Europe – the two epicenters of global finance – do we witness strong control of financial markets by public authorities. Why has finance not been given the fundamental overhaul that had seemed apposite? In stylized terms, scholars have proposed two lines of argument: actors in charge of reform either remained caught in a web of false (putatively neoliberal) ideas. Or they were motivated by particularistic interests, be they those of financial firms or of governments themselves, as emitters of debt and hosts to financial centers (Goldbach, 2015; Helleiner, 2014; Lall, 2012; Schmidt and Thatcher, 2013; Underhill, 2015). Filtered through complex political institutions, these motivations translated into relative regulatory stasis (Moschella and Tsingou, 2013).

Both arguments are plausible, and there is ample evidence of both intellectual tunnel vision and regulatory capture in specific instances. It is unnecessary to assume that one or the other would completely dominate policymaking to appreciate their importance in (obstructing) regulatory reform. That said, we identify a crucial subset of regulatory problems in which neither the undue focus on material interests nor entrenched ideas explain observable regulatory patterns well. These are cases in which, once policymakers have identified market reflexivity as the source of a regulatory problem, it becomes unclear what an appropriate solution would be. In those cases we would expect, and indeed empirically observe, a relative lack of reform not *in spite* of but *because* of market reflexivity.

Our core argument – what we call the regulator’s conundrum – can be summarized as follows: market reflexivity means that valuation techniques and risk assessments engender market volatility and frequent crises. But because this problem cannot be solved by ‘better’ evaluation techniques, it is impossible for regulators to prescribe regulatory fixes, and inopportune for them to pretend they could do so nevertheless. If reflexivity is really as entrenched as their proponents claim it is – and we agree with them on that count – publicly mandated valuation techniques cannot be relied upon to perform better than those devised by private market actors. In fact, there are significant dangers to public prescriptiveness: it might mandate all financial actors to use one and the same inevitably deficient valuation routine, exacerbating reflexivity. And it would implicate public authorities in market crashes and future financial crises. These are overriding reasons for regulators to refrain from becoming too prescriptive and overly involved in valuation and risk measurement.

We illustrate this argument empirically through three case-studies of post-crisis reform in the European Union: (1) the regulation of credit rating methodologies; (2) the introduction of bank liquidity requirements; and (3) the modification of accounting standards for financial instruments. These policy domains are substantively important to financial market functioning, but 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 EU-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 present 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 interviews held in Madrid, London, Paris, Brussels and Amsterdam with EU securities markets regulators, banking regulators, and representatives of credit rating agencies and the EU banking sector (see appendix for an overview).

This article makes two main contributions. First, it demonstrates how financial reflexivity obstructed more fundamental reforms precisely where it was most troubling. We thus expose the limits to 'regulate reflexivity away'. We do not see our argument as a catch-all explanation that competes with alternative approaches to regulatory dynamics. Rather, we expect it to shape policies that concern valuation routines. That does not mean that its importance is limited, though, given that financial valuation and risk measurement form the core of global financial markets. Second, it shows the value-added of engaging with the regulatory debates and dilemmas more thoroughly.

Frequently, analysts presuppose that if a particular policy favors one actor rather than another, the former must have been the driving force. And they assume that if only public actors wanted, they could solve regulatory challenges; when they do not, there must be some external reason. Our article encourages researchers to delve into the policy problems themselves, which may show a much greater resistance to effective solutions than we often assume.

2 High hopes, unmet expectations

2.1 The crisis of valuation and risk management

The crisis has demonstrated that financial markets do not function nearly as smoothly as liberalization advocates had claimed. It challenged a core pre-crisis regulatory assumption: relying on market participants' self-interest could ensure both market efficiency and financial stability (Mügge,

2013). Observers rediscovered Keynesian insights: in a micro-macro paradox, individually sensible behavior could feed the build-up of systemic risks (Baker, 2013; Financial Services Authority, 2009b). State-of-the-art valuation models and risk management tools lost their appeal (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 (self-referential). 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. Markets therefore have no anchor outside of market participants’ assessments (MacKenzie, 2006; Minsky, 2008 [1986]; Soros, 2008). Reflexivity accounts for the boom-bust nature of financial markets: optimistic assessments are self-enforcing when they stimulate investment and drive up asset prices. This feedback loop continues until it reaches a breaking point and the process goes into a painful reverse (Gerding, 2014). Arguments along these lines shed skeptical light on financial valuation practices, as it implies that ‘value’ and ‘risk’ do not exist independently from the tools with which market participants assess them and that guide their actions. Accounting standards failed to provide real transparency to bolster market discipline (Mügge and Stellinga, 2015). Credit raters shaped the risks they purportedly assessed, belying their ambition to objectivity (Paudyn, 2013). Value-at-Risk models did the same (Lockwood, 2015). Valuation and risk management techniques were not ‘off the mark’ during the crisis – they were themselves a key driver.

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; Warwick Commission, 2009). Mere tweaking of existing rules would not suffice. After all, many flaws in valuation and risk management practices – including the reliance on private sector risk models to set capital buffers, faulty valuation practices (marking-to-model), and widespread use of overoptimistic credit ratings – had been buffeted by pre-crisis regulation: *‘doubling up on existing regulation (...) may make matters worse’* (Warwick Commission, 2009: 2). All this boosted the case for fundamental reform.

The track record so far is mixed. Regulators and supervisors have tightened many existing rules and introduced a flurry of new ones at the global, European, and national levels (European Commission, 2014b). Nevertheless, 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. Rating agencies still control their own methodologies. Accounting standards for financial assets and liabilities still engender the danger of serious pro-cyclicality. In short, especially in the domains where they seemed most necessary, reforms have failed to live up to expectations (Helleiner, 2014).

2.2 Resilient ideas and/or obstructive interests

Why have the obvious failings of financial regulation not generated more fundamental reform? An important body of research relates limited post-crisis reforms to institutional constraints (cf. Farrell and Newman, 2010; Moschella and Tsingou, 2013; Thiemann, 2014). The core claim is that in many instances the pre-crisis institutional heritage has hampered change. Change-oriented actors were struggling to implement sweeping reforms, either because of ingrained policy approaches or because institutions were biased towards key players (whether powerful states, powerful financial firms, or both) who could block reform to maintain the status quo. Transformative proposals never made it to the negotiating tables or were watered down to a point where they no longer departed too much from the pre-crisis ways of doing things (Moschella and Tsingou, 2013).

Underlying these institutional constraints are the policy preferences that actors feed into the system in the first place. This is where our argument becomes relevant: it concerns the ability of (change-oriented) actors to develop clear policy preferences and associated reform proposals. To explain why these preferences have often stopped short of drastic overhaul, scholars have basically pursued two directions: one focusing on the ideas these actors hold, and one focusing on their material interests.

On the side of ideas, the claim is that a neoliberal regulatory paradigm – a hands-off approach to financial regulation, predicated on the belief in self-correcting markets – has proven unexpectedly resilient (Pagliari, 2012; Quaglia, 2012). In this reading, regulators have clung to pre-crisis beliefs about market functioning by explaining the crisis as a failure of public governance, rather than one of market mechanisms. Indeed, the crisis revealed the dangers of public market interference (for example stimulating home-ownership among low-income citizens).

While ‘pro-market thinking’ has certainly influenced pre- and post-crisis regulation, there is no universal pattern in the application of a putatively neoliberal paradigm. The regulatory ideas commonly identified as neoliberal can support diverse policy stances. Policymakers’ ‘belief in the market’ could imply significant reregulation to correct previous market failures but also a laissez-faire policy stance and a ‘retreat of the government’ (Mügge, 2013). The same is true for scholars of

financial reform: without an unduly selective reading of the evidence, it is difficult, if not impossible, to assign an implicit 'neoliberalism'-score to policy reforms.

Financial regulation – both before and after the crisis – therefore is a mixed bag in terms of 'neoliberal' content (Helleiner, 2014, cf. Carstensen 2016). For example, the importance of private credit ratings in regulatory frameworks, such as the Basel II Capital Accord, has been portrayed as excessive market reliance. At the same time, however, the publicly sanctioned three-firm cartel of Nationally Recognized Statistical Rating Organizations (NRSROs), as they were officially known in the USA, has been decried as undue public intervention in what should have been a free market for financial information (Partnoy, 2009). Different financial functions – stock trading, clearing, market making, credit provision, investment banking, prime brokerage, etc. – were sometimes allowed in a single company, and sometimes not, irrespective of the conflicts of interest and market distortions these combinations created (Augar 2005). In spite of a deregulatory angle and a pro-business bend, even pre-crisis regulation did not follow some paradigmatic neoliberal script.

The alternative approach has highlighted reform-resistance by self-interested actors, not least large financial firms. These actors were weakened immediately after the crisis, but they bounced back and blocked, stalled, or watered down key reforms, fearing for their competitiveness and profits (Goldbach, 2015; Helleiner, 2014; Lall, 2012; Underhill, 2015; critically Young 2012). Governments for their part resisted inconvenient regulatory changes or worried that cutting finance down to size would cause excessive collateral damage to national economies dependent on abundant credit (Howarth and Quaglia, 2013). Both dynamics can operate simultaneously: financial firms have thwarted reforms by convincing national regulators of their overall economic costs (Helleiner, 2014).

Powerful private actors have definitely put their marks on post-crisis regulatory reforms. Yet, we do not observe an unfettered translation of their demands into policy. For example, despite vehement opposition of credit rating agencies, EU-regulators introduced a civil liability regime, required frequent analyst rotation, and prohibited CRAs from offering consultancy services to companies that are to be rated (Kruck, 2011). Similarly, they forced banks to raise billions of euros to bolster their capital positions and introduced intrusive requirements on banks' internal governance structures. Policy-makers set up the European System of Financial Supervision, expanded the scope of regulation and supervision, and took steps to shield taxpayers from failing banks. They thus did not simply preserve the status quo. More importantly for our argument, the material interest perspective suggests that regulators have clear ideas about how to fix finance, but along the way let private interests trump the public ones. Empirically, however, we see them struggling to formulate a

coherent response in the first place, particularly in the domains pertaining to financial valuation. It is that pattern that we will need to explain.

Although the two approaches seem polar opposites, they share an important assumption: actors know what they want, whether in terms of corporate or regulatory goals, and they know which reforms will get them there. The profit motive or a paradigm guide firms and regulators, respectively, in their actions, and they neatly translate into desirable or at least acceptable reforms. If financial market reflexivity does not trigger regulatory overhaul, then either people do not understand it because of ideological blindfolds. Or they are willing to imperil long-term financial stability for their own short-term benefit.

Both intuitions are plausible. But they poorly fit the empirical pattern and are not convincing theoretically. They underappreciate how policymakers genuinely puzzle about appropriate answers to regulatory challenges, especially when it concerns financial valuation practices. Powerful interests frequently intervene, and narrow argument and information pools can act as blinkers as policymakers consider reform. But we contest the assumption that a translation of financial reflexivity 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 rooted in reflexivity itself. It generates the timid reforms that champions of reflexivity decry. We observe limited reforms not *despite* of reflexivity but precisely *because of* it.

3 Financial market reflexivity and the regulator's conundrum

Our point of departure is neither the perceived interests of actors or dominant regulatory ideas but the regulatory problems themselves. Some of these are rather easy to solve: for example, firms that offer citizens financial advice should not profit from it indirectly, for example through hidden commissions. When they do, a conflict of interest ensues, and we should expect advice to contradict the clients' interest. The obvious solution is a separation of functions. In contrast, financial market reflexivity highlights much thornier problems, whose root lies in the indeterminacy of financial valuation.

3.1 The indeterminacy of financial valuation

We borrow the label 'market reflexivity' from Soros, who popularized it in his accounts of financial crises (Soros, 2008). This concept usefully summarized features of financial markets that others had previously identified but which Soros fused in an accessible framework with straightforward implications. The basic point is simple: financial markets are self-referential systems that change

under observation. Market participants' positive assessments are self-enforcing as they translate into increased (debt-financed) investments, rising asset values and higher profits. Ultimately, this feedback loop reaches its limit and a downward spiral sets in, often in a much more dramatic form (a crisis). These macro-consequences of reflexivity were already recognized and described by Keynes and famously picked up Minsky (Keynes, 1964 [1936]; Minsky, 2008 [1986]). Behavioral economists, notably Akerlof and Shiller (2009), later worked out the micro-foundations of financial agents' behavior that lead to phenomena such as herding.

Valuation problems are at the root of these nefarious dynamics. Reflexivity implies that there is no value of financial instruments independent of our valuation routine, because the latter shapes the future, and hence the realized value, that it only purported to describe. The problem appears 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 continue. These probabilities are not given, waiting to accurately estimated, because the estimation itself changes them (MacKenzie, 2006).

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. As Turner (2010), former chairman of the FSA, puts it: *'the fundamental problem we face is that there are no definitive 'facts' about value – for value in financial markets is contingent on specific circumstances and on the action of all other participants'*. Although to an individual market participant it may seem that she is only 'measuring' value, for the financial system as a whole these valuations are endogenous: they depend on system-wide behavior that is itself influenced by valuation methods (cf. Mügge and Perry, 2014).

We find valuations everywhere in financial markets. We here focus on practices that are key to the functioning of financial markets and have therefore been subject to substantial regulatory scrutiny. They include credit ratings, which are meant to inform financial actors about default risks; measures to ensure that firms have sufficient low-risk assets in order for them to weather liquidity problems; and accounting standards, which describe how companies have to value assets and liabilities in official reports. But the list can easily be expanded, for instance rules on risk-weighting assets in financial portfolios, the use of quantitative models such as Value-at-Risk in firms' risk management procedures, or the stress testing of financial firms to assess whether they can withstand adverse market conditions.

From a reflexivity perspective, it is impossible to develop fool-proof valuation techniques in these domains. Observers have often discussed this problem within the framework of risk versus uncertainty, arguing that financial regulators and firms mistakenly assume that assessing the future is akin to constructing its probability distribution (cf. Nelson and Katzenstein, 2014). We contend that the problem runs deeper. Not only is the future unknowable, but more importantly, it is shaped by our assessments. The problem is that any positive or negative assessment – in the aggregate – shapes the asset values, default risks, and likelihood of adverse scenarios that was supposed to be exogenous: ‘the process of anointing something safe actually makes it risky’ (Persaud, 2015: 5). But just as it complicates the task of administrators inside financial institutions, it presents regulators with a fundamental problem.

3.2 The regulator’s conundrum

Reflexivity, as Minsky, Soros and others with them argued, makes financial systems much more crisis-prone than mainstream economics suggested. In consequence, advocates of the reflexivity view called for much greater levels of public intervention in financial markets. Consider a few examples of valuation problems that triggered calls for public action: excessive leeway in accounting techniques implies that standard setters should, for the future, ensure that gains and losses would be reported faithfully, without room for corporate tinkering. Faulty credit ratings suggested that public authorities should introduce quality checks for rating methodologies or even start doing the rating themselves through some kind of public rating agency. And previous risk-weighting and netting rules, that apparently allowed financial institutions to reduce capital requirements, seemed to call for public authorities’ prescription or intensified checking of risk-weighting procedures.

In a nutshell, the alternative to privately controlled valuation routines would be ones that are publicly monitored, mandated or even executed. But precisely because of market reflexivity, such public routines are difficult to implement. 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? Reflexivity is just as much of a problem for public authorities as it is for financial firms.

Indeed, the impossibility of solid valuations furnishes two potent arguments against too much public intervention. First, 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 (Daníelsson, 2013). The importance of observing other's behavior – Keynes' famous beauty contest – would still ensure spontaneous herding, but in theory at least, it should be no more deleterious than herding of the legally enforced kind (Gerding, 2014).

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 positively vetting one that has been devised by a private actor, implicates public actors when things eventually go wrong. This problem has always dogged stress tests, and it ultimately is inescapable. Public actors have an incentive to steer clear of valuation routines themselves. Reflexivity thus discourages the deep public interventions that, superficially considered, it would seem to inspire.

The difficulty of making effective rules does not relieve public actors from the need to regulate in one way or another. Rulemaking authorities have had to live up to political and societal expectations that they would (quickly) solve the identified instability problems – especially in the politicized post-crisis world. However, once policy-makers have to translate high-level requests to fix financial valuation into actual policy reforms, they hit upon the regulatory conundrum.

3.3 Empirical implications

This argument generates several empirical expectations. It suggests a specific reform pattern in areas that feature valuation problems. Those can co-exist with other controversial issues in any single policy domain. For example, conflicts of interest in business models of banks or rating agencies should be much easier to solve than deficiencies of valuation routines. We therefore expect genuine puzzling in the regulatory community: controversy and disagreement about public guidance for valuation, expressed not only by private actors but – crucially – also by the regulators themselves. Such controversy can still stem from regulators' or firms' material interests or from firmly held belief systems. More specifically, we therefore also expect ample evidence that regulators recognize, or stumble upon, the specific regulatory problems that reflexivity generates – even if they are not explicitly labelled as such.

Concerning policy outcomes, we expect them 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.

4 The regulator's conundrum in practice

The empirical section of this paper illustrates these arguments for domains in which valuation and risk assessment stand central: the regulation of credit rating agencies' methodologies, liquidity regulation, and accounting standards for financial instruments. Market reflexivity limits regulators' ability to fix valuation problems in these 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 credit rating agency (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. Those are not only impossible to estimate with certainty. More problematically, the ratings affect these probabilities 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 firms – Standard & Poor's, Moody's, and Fitch – which together account for over 90 percent of the rating market (Deb et al, 2011). As their ratings are widely used (partly through inclusion in financial contracts and particular regulations), rating changes can have systemic effects. Although methodologies obviously differ in quality, no methodology is immune to the perils of reflexivity: ratings always affect and never just measure risks. A 'correct' rating methodology remains elusive.

Reflexivity 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? Indeed, intervention in rating methodologies could aggravate the problems it was meant to solve. The systemic effect of ratings hinges on the market dominance of the Big Three. 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 regulatory conundrums permeate post-crisis EU policy-making. Before then, CRAs were essentially unregulated. In 2006, 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 quickly pointed to conflicts-of-interest in the rating sector, such as the issuer-pays model and the lack of ‘Chinese Walls’ 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.

To begin with, 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 systemic 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). 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 challenged the pre-crisis ‘hands-off’ policy approach. The European authorities resolved that they needed a regulatory framework for CRAs and adopted a Regulation (CRA 1) in 2009. Arguably, this framework 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 more thorny, although they were a focal point in negotiations on CRA 1. As acknowledged by a European 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). But on which aspects should regulators focus? The eventual solution was to steer clear of public meddling with the content of methodologies (Article 23) and concentrate on procedures, instead (Article 8).

During the consultation on this Regulation, CRAs, banking groups, and investors criticized regulatory interference with the content of methodologies (European Banking Federation, 2008; EFAMA, 2008; Interview 20160413a; Interview 20160422; Standard & Poors, 2008). Still, the decision to leave methodologies' content alone did not rest on effective private-sector lobbying. EU regulators and supervisors themselves remained 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'*.

Several problems fed public authorities' opposition to interference with the rating methodologies, including insufficient regulatory expertise and capacity and major conflicts of interest (Interview 20160408a; Interview 20160404). Yet the regulatory challenges go deeper. 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). Moreover, if regulators prescribed rating methodologies, they would boost systemic risks: *'if the government is wrong, everybody is wrong'* (Interview 20160413b). Given the slim chance that substantive involvement would improve rating quality, it would at best shift the reputational risk for rating inaccuracy towards the regulator, making it an unattractive policy option (Interview 20160408b). According to an EU securities market regulator, *'as a regulator you don't want to be held responsible for a particular rating. You don't want to suggest it you have approved it'* (Interview 20160404).

Non-interference with the content of methodologies did not imply that CRAs were completely 'off the hook' – as approaches highlighting neoliberal (laissez faire) ideas or private interests would suggest. 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 CRA 2 (2011) – would have to check whether CRAs' methodologies conformed to Article 8 (3), without actually interfering with their content. 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, 2011).

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 final 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. How to draw the line proves difficult. ESMA's 2012 Regulatory Technical Standard, stakeholders found, lacked specificity, just like Article 8 (3) itself (Interview 20160421; Interview 20160422). The crux lies in the 'validation' of CRAs' methodologies. ESMA (2015) champions 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 are effectively required to draw hard conclusions from faulty expectations even if such narrow back-testing does not predict the methodologies' adequacy in the future. 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' methodologies before the crisis, regulators have struggled to respond appropriately. 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 case does not see a flawed neoliberal ‘laissez-faire’ idea-set hampering the regulators in implementing the ‘right’ rules. Such a diagnosis would be hard to square with the overall regulatory backlash CRAs have seen since the crisis (García Alcubilla and Ruiz del Pozo, 2012). Neither is the policy-outcome a clear victory for the CRAs: they have frequently but unsuccessfully opposed regulatory scrutiny of their methodologies (Interview 20160421; Interview 20160422). More than anything, the uneasy policy fixes reveal how reflexivity presented regulators with an impossible conundrum.

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 firms to hold assets that are low-risk and highly liquid, for example bonds of ‘financially sound’ governments or firms. The safety of an asset, however, does not reside in the financial contract itself. It hinges on market conditions and the counterparty’s soundness and safety net (Gelpern and Gerding, 2016; Warwick Commission, 2009). 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 asset categories can change dramatically as market participants depend on collective guesses of each other’s soundness. Indeed, when investors expect asset classes to remain safe and liquid, overcrowding may over time reduce safety and, down the line, liquidity (Minsky, 2008 [1986]; Soros 2008). Regulators therefore face a micro-macro dilemma: when they attempt to make individual institutions safe by pushing them into ‘liquid’ asset classes, they may unwittingly erode the latter’s safety and liquidity over time (Gelpern and Gerding, 2016). 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, rampant demand in turn unhinged the whole market segment, and a collective sell-off of these instruments during the crisis made them illiquid (Gerding, 2014). Public designation of assets as ‘low risk’ – for example risky government debt – also invites regulatory arbitrage, with firms exploiting the gap between the regulators’ risk assessment and their own (Brunnermeier et al, 2009).

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, the HQLA-category needs to be restrictive to be meaningful. On the other hand, such restrictiveness can be counterproductive because it reduces liquidity when you need it most. This conundrum 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 undue the perverse consequences of strict rules: a collective scramble for the limited pool of officially designated HQLAs.

Advanced economies rarely regulated liquidity before the financial crisis. 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 such rules unnecessary. It argued that capital requirements would 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 on liquidity. 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, 2009).

In response, the BCBS included liquidity standards in Basel III (2010). The Net Stable Funding Ratio (NSFR) 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 suffice to 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 of funds in 30 days? And would banks be allowed (temporarily) to miss the minimum LCR in times of actual stress? The BCBS proposed a strict definition of HQLAs, incorporating cash and central bank reserves, government bonds with a risk weight of 0% and 20%, and highly-rated corporate bonds. Outflow assumptions were also rather drastic, assuming for example 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). Basel III, in other words, included precisely the kind of heavy-handed response to liquidity crunches that one would have expected.

The BCBS deferred implementation until 2015, however, to create an observation period and enable potential modifications. Caruana (2011), General Manager of the Bank for International Settlements, argued that 'unintended consequences' were to be expected (cf. BCBS, 2010: 10). European and

American banks criticized the measures as far too stringent (Interview 20160603; Masters and Murphy, 2011). But they were far from the only sceptics. Several key monetary policymakers feared that these standards would clog interbank markets, given their high assumed 'outflow rates' (Coeuré, 2012; Noyer, 2012). The IMF fretted that too narrow a definition of HQLAs could trigger a shortage of safe assets (IMF, 2012). It could also stimulate banks to hold similar liquid asset portfolios, resulting in more homogeneity and increasing systemic risk, while simultaneously reallocating liquidity risks to other parts of the financial sector (Wagner, 2013). Finally, designating assets as 'liquid', combined with an inflexible minimum-ratio, could *decrease* their liquidity when firms would accumulate rather than trade them (IMF, 2012; Kowalik, 2013).

Considering these unintended consequences, the BCBS presented substantially softened LCR-requirements in January 2013. 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 (Kowalik, 2013; Masters, 2013). The EU version of the LCR was even less stringent than the BCBS standard (European Commission, 2014a). For instance, it treated all EU member states' sovereign bonds equally – all qualified as HQLAs and could be used without limit to meet the LCR.

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. Unless funding patterns substantially shifted, banks' potential need for qualifying assets would have been \$2 to \$4 trillion to fulfill LCR requirements, substantially augmenting the already high post-crisis demand for them (IMF, 2012). 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.

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. However, this 'marking-to-market' can increase volatility in firms' income statements, feed herding 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, making it a less volatile approach than FVA. But in an economic downturn, it may hide trouble at financial institutions. Derivatives have exacerbated the problems of HCA, 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, reflexivity 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. We should thus expect standards that mix both approaches and alter the details of each as particular features are witnessed to exacerbate problems. But no accounting standard can count on unequivocal support from banking regulators.

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. IAS 39 mandated fair value accounting for a significant chunk of financial instruments. Both banks and their regulators feared an increase in volatility. Regulators asked the IASB to be more flexible 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; Stellinga, 2014).

The crisis again pushed fair value accounting 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, both on the micro level (banks meeting capital adequacy requirements) and on the macro level (asset sales induced further falls in assets' market value) (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). It thereby allowed tens of billion euros in EU banking losses to go unrecognized in 2008 alone (CESR, 2009).

This short term solution offered troubled banks some relief, but it was problematic nevertheless: *'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). A more durable solution was clearly 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: BC 13). 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 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).

We should not mistake the BCBS' pleas for limits on fair value accounting for banking regulators 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 regulator's requests. It allowed reclassification under a complex set of conditions (IASB, 2009b: A268), effectively relocating the problem from accounting to classification. 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 it still refused to adopt the new standard (Tait and Sanderson, 2009). The European Commission still wondered whether new rules would unduly expand fair value accounting, 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. Crucially, the EU still has not endorsed IFRS 9 (EFRAG, 2016). European banking regulators currently flag no major problems with financial instrument classification (EBA, 2015). 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.

Regulators' enduring prevarication on financial accounting standards contradicts an excessive influence of a neoliberal paradigm or private interests over rule setting. Reformers had hoped to limit market-based accounting, rather than to widen its scope (Mügge, 2013). And 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, regulators 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. Nor are regulators under the spell of flawed neoliberal ideas, which would have inspired them consistently to implement a particular vision on financial markets. Instead, the intractability of financial valuation has precluded convincing answers. These valuation problems spawn financial instability, herding behavior, the endogenous build-up of systemic risks, and periodic crashes, and they persist (or become worse) even if public actors assume responsibility for valuation and risk measurement. Indeed, regulators have good reasons to eschew control over financial valuation to avoid responsibility for inevitable market crashes, major or minor.

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 and risk assessment 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.

So is 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.

As regulation often triggers unintended market changes, continuous monitoring and a willingness and ability to change course is imperative. Regulatory vigilance requires sufficient capacities and capabilities for regulators and supervisors – especially when markets are booming (Gerding, 2014: 495-6). Supervisors could also use some help. Finance needs watchdogs – particularly actors who do not materially benefit from market booms. The EU has recently implemented a number of initiatives that try to strengthen civil society actors (for example by supporting the critically-minded NGO Finance Watch), but more can be done to support their capacities (Anheier, 2014). Policy frameworks should also be conducive to dynamic regulation: rules should not be cast in stone and excessively detailed. Principle-based regulation better fits the complexity, dynamism and diversity of financial markets, as these characteristics make it impossible to capture everything in detailed rules.

When policy requires continual adaptation, full harmonization of financial valuation and risk management 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 (Dánielsson, 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 increase the financial system's resilience in case of turmoil, and to diminish the vulnerability of our economy and society to the vagaries of financial markets (cf. Mügge and Perry, 2014). Rather than trying to eliminate instability, regulators should strive for a system that can cope with it, for example through shock buffers, redundancies that cushion firm failures, and diversity that limits herd behavior and contagion (Goldin et al, 2014).

Clearly, more work is to be done in this regard. For example, as long as financial firms are too big or too interconnected to fail, the sector lacks redundancy – notwithstanding the positive attempts to shield taxpayers from future losses through the EU bail-in rules. Similarly, firms should be limited in their ability to combine many different financial activities, as firm-level diversification may still imply system-wide homogeneity (Haldane, 2009). The lack of progress on banking structural reforms is worrying in this regard. Of course there is not an 'objectively correct' way to draw the lines – and segmented financial sectors are also prone to instability – but making the system less complex can at least help public authorities better deal with instability once it materializes.

Still, the limits of regulation ultimately necessitate a reduction of society's exposure to financial instability. 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).

6 References

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APPENDIX: Interviews

20160316 = Banking regulator (two respondents)

20160404 = Securities market regulator

20160408a = Securities market regulator (two respondents)

20160408b = Securities market regulator

20160413a = Banking regulator (two respondents)

20160413b = Credit Rating Agency representative (two respondents)

20160414a = Credit Rating Agency representative

20160414b = Banking and investment services representative

20160421 = Securities market regulator

20160422 = Credit Rating Agency representative

20160603 = Banking sector representative