The Critical Juncture of European Financial Market Supervision? Central Counterparties, Supervisory Arbitrage and Brexit

Manuscript presented by Christian Resch
Authored by Matthias Thiemann, Christian Resch and Jan Friedrich

October 2017

Abstract

In 2009, the G20 announced to tackle the regulatory shortcomings in the OTC derivatives market by obligations to clear those contracts through private central counterparties (CCPs). The importance and prominence which CCPs gained subsequently meets a flawed supervisory regime. Although their European regulation addresses concerns over financial stability, these requirements are only leniently enforced by national supervisors. As a consequence, the regulatory reform to stabilise the OTC derivatives market has at its centre the characteristics identified jointly as major problems, namely putting together private risk management systems and competition with the national supervision of European rules. However, this problem was known to policy makers even before the financial crisis. The paper investigates the open question why the threat of regulatory and supervisory arbitrage failed to gain traction in past regulatory reforms, especially during the aftermath of the crisis. The analysis shows that the current regime is the result of the legacy of the pre-crisis paradigm and the peculiarities of the EU. It uses the gained insights to position Brexit and the CMU as a critical juncture in the evolution of the supervision of CCPs in Europe which might eventually lead to a resolution of the flawed governance system.

Contents

1 Introduction

The outcome of the British referendum on 23 June 2016 came as a surprise. In the following months, Brexit spawned manifold debates about the future of the European Union and the United Kingdom. Among these debates, the financial community and related policy makers currently engage in a conflict over the future location of the euro-clearing – the central clearing of euro-denominated derivatives (e.g. Bloomberg 2016, 2017a). Central counterparties (CCPs) which conduct central clearing are financial risk management institutions that pool, net and diversify counterparty risk by interposing themselves between the buyer and the seller, guaranteeing the termination of a market transaction (Chamorro-Courtland 2011, p. 435; Domanski, Gambacorta, and Picillo 2015; Friedrich and Thiemann forthcoming). The impending national competition over the euro-clearing and the risk to lose regulatory and supervisory grip over the remaining businesses alarmed European policy makers. The chair of the EU financial market supervisor – the European Securities and Markets Authority (ESMA) - Steven Maijoor repeatedly stressed that Brexit must not lead to a race to the bottom to attract companies to migrate from London to domestic financial centres (e.g. Maijoor 2017, p. 6). Additionally, the looming threat of an uncontrolled clearing market in the UK sparked legislative action by the European Commission which resulted in a proposal to reform the respective European Market Infrastructure Regulation (EMIR, see European Commission 2017b,c). If adopted, this proposal would resolve problems of supervisory arbitrage which the framework enables: Currently, EMIR provides harmonised European rules for CCPs. In contrast, the supervision of these regulations mainly remains with the national authorities. This arrangement allows national supervisors to leniently enforce the prudential requirements to protect national champions or private CCPs to pressure their supervisors to do so (Interview # 1 with regulator).

However, these warnings of regulatory and supervisory arbitrage[1] are not new. This problem caused by national supervision was known to European policy makers at least since 2001. Pre-crisis discussions on clearing and settlement featured the problems and its effects on financial stability (see Giovannini Group 2001, 2003). Additionally, regulatory and supervisory arbitrage have been identified as contributing to the financial crisis of 2007 and 2008 in the early days of post-crisis reform (see De Larosière Group 2009). The open question is why regulatory and supervisory arbitrage failed to gain traction in past regulatory reforms, especially during the aftermath of the crisis. More gener-

[1] While regulatory arbitrage knows two forms – jurisdictional arbitrage which exploits differences in national systems and categorical arbitrage which exploits the discrepancy between two legal categories which are functionally the same (e.g. special purpose vehicles as off-balance sheet banking activities, see Riles 2014; Thiemann 2012)-, we denote practices which try to benefit from different supervision and enforcement of the same rules as supervisory arbitrage (which is a subset of regulatory arbitrage).

ally, this case study investigates the question under which conditions perceived flaws in governance structures lead to a change in these structures. By asking this question, this paper sheds light on the evolution of the supervisory regime for CCPs and the irony that the regulatory reaction to stabilise the shadow banking system contains once again the conjunction of three factors which was identified as a major problem beforehand, namely putting together private risk management and competition while allowing for the exploitation of this private risk management to minimise collateral due to the national supervision of European rules (cf. Hellwig 2010; Thiemann 2012, 2014, forthcoming).

As we will argue, the past discussions and failed reforms provide an available critique of the current arrangement which different agents like ESMA or the ECB currently use to push for a centralisation of CCP supervision. The institutionalist literature points to this internal variety of paths which are traversed by bits and pieces of alternative unrealised or unfinished institutional projects (see Schneiberg 2007). These projects provide elements for the toolkit on which institutional bricoleurs can draw in attempts to change or amend the prevailing institutional order (cf. Swidler 1986; Carstensen 2011). However, after the crisis these attempts failed due to distinctive features of Europe's political economy and the legal framework of the European Union.

The paper is structured as follows: After a short introduction to central counterparties and their supervision, the paper illustrates that the potential problem of regulatory arbitrage of CCPs was known before the crisis. A process tracing analysis of the legislative history of EMIR and related legislation shows why the post-crisis regulatory reform failed to account for these problems. This analysis proceeds in two steps: First, we show how the pre-crisis paradigm for the regulation of the derivatives market remained partially intact in form of private and competing CCPs during the emergency response after the financial crisis. In the second step, we demonstrate how the idiosyncratic characteristics of the European Union gave rise to a flawed governance system in Europe. Finally, the conclusion places current dynamics surrounding Brexit and the CMU within this framework to show why they constitute a critical juncture for European financial market supervision.

2 Brief overview of central counterparties and their supervision in Europe

To illustrate the problem in greater detail, this section provides a short introduction to CCPs and summarises their European supervisory regime. CCPs saw a huge growth since the crisis. At the end of 2016, 60 to 80 percent of interest rate derivatives and 20 to 40 percent of credit derivatives were centrally cleared (depending on the measurement, BIS 2017). Although the regulatory effort at first focused on derivatives, CCPs also grew to be a central pillar of the European repo market[2]. The share of centrally cleared repos rose to 65 percent in 2015 (ECB 2015; see also Thiemann, Birk, and Friedrich forthcoming). This growth was spurred by the mandatory clearing introduced in the US and Europe as well as higher margin requirements for contracts to which the mandatory clearing does not apply. CCPs constitute a major component of the attempt to transform shadow banking into resilient market based finance and the post-crisis reform efforts which extend beyond the banking sector (see FSB 2014, 2015; ESRB 2016).

In general, a central counterparty is an entity which interposes itself between the two counterparties of a contract in financial markets (Steigerwald 2013, p. 12; Domanski, Gambacorta, and Picillo 2015, p. 60). In every transactions, parties face counterparty risk which is the risk that the other party to the transaction defaults and fails to meet its obligation. To mitigate this risk, it is common to post a collateral in these transactions. If in this situation a central counterparty is imposed between the parties, the counterparty risk which the parties face is reduced because it is replaced with the risk of the CCP's default which is less likely due to cushions and mutual loss sharing (Steigerwald 2013, p. 13). This is of special importance in the derivatives market because derivatives are intertemporal contracts by nature and thus the counterparty risk is higher (Krahnen and Pelizzon 2016, p. 4). Legally, the bilateral contract between the two parties which is concluded in the first place is usually novated by two new contracts between the two parties and the CCP (Steigerwald 2013, p. 12; Domanski, Gambacorta, and Picillo 2015, p. 60). In this new contractual relationship, the CCP guarantees to step in if one of the parties defaults and becomes therefore the "buyer to every seller and the seller to every buyer" (Domanski, Gambacorta, and Picillo 2015, p. 60). However, this migration of trades to a CCP does not eliminate the counterparty risk (Bank of England 1999, p. 126; Singh 2011). To mitigate the still existing counterparty risks, CCPs demand the parties to post a margin (Krahnen and Pelizzon 2016, p. 4). These margins consist of a fixed initial part and a variable part which is constantly adapted to changing evaluations (Domanski, Gambacorta, and Picillo 2015, p. 61). Moreover, the parties have to be a clearing member of the respective CCP and minimum requirements for clearing members are applied to further safeguard CCPs against counterparty default. This positions CCPs as the nucleus of dense networks which include major banks and other service providers (FSB 2017). Therefore, the competition between CCPs does not only concern the business of CCPs themselves but the profitability of the connected banking and finance sector as well (Interview # 1 with regulator).

Theoretically, the advantage of CCPs beside the reduction of counterparty risk comes in form of multilateral netting and increased transparency. Because the CCP has information about the mutual exposures of all its clearing members, it is able to calculate the net exposure of a clearing member

[2]Repos or repurchase agreements are collateralised short term funding instruments.

and consequently reduce the overall collateral in comparison to the opaque situation with only bilateral contracts (Duffie and Zhu 2011). This "collateral efficiency" (Krahnen and Pelizzon 2016, p. 5) allows for the same level of (theoretical) safety with a lower amount of collateral. Together with high fixed costs, multilateral netting, which leads to economies of scale, explains the natural monopoly property of central clearing (Domanski, Gambacorta, and Picillo 2015, p. 63; Krahnen and Pelizzon 2016, p. 5).

In addition to the margins, clearing members participate in a default fund. These funds constitute the second line of defence in the case of a clearing member's default. If the losses exceed the posted margins and default fund, the last line of defence is constituted by the CCPs capital (the "skin in the game"). The exact design of this "waterfall" has crucial consequences for the incentives of the CCP and its clearing members (Domanski, Gambacorta, and Picillo 2015, p. 61). Even more important, the precaution for the case of a member default are at the core of the discussion about the potential systemic risk which emanates from CCPs.

The issues which are discussed with regard to the systemic risk connected to CCPs are diverse: Concerning the roboustness of CCPs, Glassermann, Moallemi, and Yuan (2015) point out that the margin requirements might insufficiently cover the risk exposure (especially liquidity risk) in a situation with multiple CCPs. This is because margin requirements need to increase superlinearly with position size due to liquidity costs in the case of a default. However, in a situation with multiple CCPs, clearing members have the incentive to split their position among the CCPs to circumvent the higher margin requirements (Glassermann, Moallemi, and Yuan 2015). Domanski, Gombacorta and Picillo remark that banks are often not just clearing members but also providers of liquidity lines, backup facilities and other financial services (Domanski, Gambacorta, and Picillo 2015, p. 63; see also Wendt 2015, p. 9; FSB 2017). Consequently, a default of such a clearing member could impose further stress on the CCP. Wendt argues that while CCPs reduce the interconnectedness of banks they establish new interconnectedness in the financial system (Wendt 2015, p. 6). The macroprudential perspective stresses that variation margins are procyclical in nature and will be called in when financial stress is rising and the value of the collateral is already deteriorating (Wendt 2015, p. 7; Domanski, Gambacorta, and Picillo 2015, p. 69; Borio 2004; see also Thiemann, Birk, and Friedrich forthcoming). Therefore the pressure clearing member face will be aggravated. In the case losses exceed the pre-funded resources, loss sharing arrangements can impose further stress on clearing members (Wendt 2015, p. 7). The term "robust-yet-fragile" which Andrew Haldane coined for this kind of financial networks which are stable in most times but could turn to major contagion channels in times of stress summarises these concerns (Haldane 2009, p. 5; Krahnen and Pelizzon 2016, p. 6).

Krahnen and Pelizzon place special emphasis on the competition between CCPs. As they argue, competition leads to imprudent behaviour when margin requirements become part of the competition (what they call "predatory margining" (Krahnen and Pelizzon 2016, p. 7)). This argument gains increasing importance because competition between CCPs and exchanges, which own most of the CCPs (Domanski, Gambacorta, and Picillo 2015, p. 62), is intense and the struggle to compete for business from London is likely to aggravate this competition. They further note that the issue of competition has received less attention in contrast to the risk of consolidation in the scientific discourse (Krahnen and Pelizzon 2016, pp. 6-7). Like most of the shadow banking system, CCPs business is high volume and low margin (cf. Pozsar et al. 2010). This situation makes regulatory costs a major factor in the industry and attempts to game the system endemic (Thiemann and Lepoutre 2017). Additionally, the pivotal role of regulatory costs makes regulatory competition including a collusion between regulators and the regulated industry effective in clawing business from other locations.

While all aspects underline that CCPs are important with regard to systemic risk and not necessarily robust, especially the last point is of crucial importance for this paper: Although "predatory margining" could be mitigated with harmonised regulation in EMIR, the regulation needs to be coherently enforced which turns out to be difficult with the fragmentation of the supervision along national lines. The respective European regulation is the European Market Infrastructure Regulation (EMIR). EMIR entails manifold measure to ensure the stability of CCPs. For example, the Regulatory Technical Standards (RTSs) which accompany EMIR provide that multiple instruments which are supposed to be offset are "significantly and reliably correlated" (Commission Delegated Regulation No 153/2013) and limit the reduction in collateral by offsetting multiple instruments. These rules are, in general, enforced by the designated authority of the EU member state in whose territory a CCP is based. In addition, the regulation addresses the cross-border nature of the CCP business by implementing colleges of supervisors. This college consists of the respective national supervisors, national supervisors of connected CCPs, service providers and clearing members as well as representatives of ESMA and the respective central bank (in most cases the ECB). However, the competence of the college is severely restricted (see also Moloney 2015). For example, it has no say in the day-to-day supervision and can prohibit authorisation of a CCP only if the college consensually comes to a negative opinion. This arrangement poses a severe problem because the installed mechanisms which are supposed to account for the cross-border nature (including the possibility of supervisory arbitrage and competition) of the CCP business do not fulfil their purpose. In practice, the above-mentioned and other prudential standards are only insufficiently enforced because the national supervisors have sufficient leeway (Interview # 1 with regulator). CCPs were meant to decrease interconnectedness and increase transparency with the price of creating new to-big-to-fail entities (Singh 2011). However, a recent FSB (2017) study illustrated that the move to install CCP to reduce interconnectedness actually resulted in a deeply connected network of CCPs, clearing members and service providers. This fact just increases the case for sufficiently safe CCPs which – as shown – the current flawed governance arrangement cannot ensure.

3 It was known before: Regulatory discourses addressing regulatory arbitrage pre-crisis

The general problem which we identified with the current governance arrangement for CCPs is not new. Already in 1999 on the occasion of the start of LCH.Clearnet's Swapclear and Repoclear services in the UK, the Financial Stability Review of the Bank of England (1999, pp. 122-134) reviewed advantages and disadvantages of CCPs. The report already covers a variety of topics which re-emerged after the crisis – including "predatory margining" (Krahnen and Pelizzon 2016), limits to contagion and the concentration of risks which follows from the CCPs' business model. Besides these early discussions, pivotal documents are the Giovannini reports of 2001 and 2003 and the 2001 report of the Lamfalussy Committee. The Giovannini reports have been written by the Giovaninni Group. Founded in 1996, this group composed of financial sector experts, the Directorate-General Economic and Financial Affairs, the Directorate-General Internal Markets as well officials from the ECB (Quaglia 2010). This group, chaired by Alberto Giovaninni, was set up to advise the European Commission on financial issues. The first three reports were concerned with the likely consequences on financial markets of the introduction of the euro, the EU repo market, national differences in market infrastructure, practices as well as legal and fiscal frameworks and made proposals to improve the efficiency euro-denominated government bond markets. In its fourth report, the group turned to issues of clearing and settlement in two distinct parts. The respective working group was composed of representatives from private CCPs and securities settlement systems (SSSs), banks, central banks but also from one consultant firm, one audit firm as well as one official from a rating agency (Giovannini Group 2003, pp. 44-45). The two reports published in 2001 and 2003, which constitute the group's engagement with clearing and settlement, assessed the arrangement of cross-border activities, identified obstacles and inefficiencies and proposed solutions (Giovannini Group 2001, p. i, 2003, p. i).

The Lamfalussy Committee (2001) – a high level group whose report also established the still existing Lamfalussy architecture - recommended the restructuring of clearing and settlement market infrastructure in a way that it enables a consolidation of the sector for clearing and settlement. While it emphasised that the private sector failed to produce an efficient pan-European clearing and settlement system, it also stresses that "the process of consolidation should largely be in the hands of the private sector. Market forces should mainly determine the contours of European clearing and settlement such as the extent of linkages between post-trading bodies, (clearing, settlement, CSD's etc), and the possible emergence of a single European central counterparty" (emphasis added Lamfalussy Committee 2001, p. 16). Thus, public policy should merely focus on issues of competition and the removing of obstacles impediments that make this consolidation difficult. The Giovaninni Group adopted this formulation (Giovannini Group 2001, p. 1). In addition, the Lamfalussy Committee reported support for a convergence of supervision in Europe: "Most respondents consider that differences in the competences and powers of national supervisory authorities hinder the consistent application of EU legislation and effective international cooperation. A great majority of replies indicate that prior harmonisation of the national regulators competences is seen as necessary, as well as a thorough revision of the division of responsibilities between supervisory authorities and exchange" (Lamfalussy Committee 2001, p. 50). The 2003 report of the Giovannini Group states the "conviction [...] that efficiency in EU clearing and settlement arrangements cannot be optimised within an environment of multiple regulatory, fiscal and legal regimes" (Giovannini Group 2003, p. i) and that a more activist role of national governments is perhaps required "if it proved necessary to overcome national sensitivities and/or the perverse incentives that exist for entities that profit by arbitraging inefficiencies in cross-border clearing and settlement" (ibid., p. 4, footnote 9). The report also stresses that further cross-border consolidation makes the coordination between national authorities more difficult and therefore give rise to inconsistencies in the application and enforcement of regulations (ibid., p. 29). However, while the group adopted the stance of the Lamfalussy Committee that private actors should carry the cross-border consolidations, it also remarks that there are circumstances in which competition can have a negative impact on the robustness and stability of the clearing system. However, they assume that fewer and more consolidated CCPs are easier to supervise and these circumstances are unlikely to occur (ibid., p. 28). In contrast, the current situation of limited consolidation and harsh competition (exacerbated by Brexit) includes exactly these circumstances in which competition constitutes a problem for financial stability. The Group explicitly remarks that "if the relevant regulations are not equally and consistently enforced, there could be competitive distortions with adverse effects on the allocation of resources and social welfare" (ibid., p. 32). To address this (in the report hypothetical) scenario, the Group recommended a pan-European supervision to effectively enforce the demanded common principles (ibid., p. 28). These reports illustrates two aspects: First, the problem which the governance of CCPs faces nowadays was well know and discussed not just in academia but in high level advisory groups of the European Union. Second, especially the Lamfalussy Committee but also the Giovannini Group follow a market-dominated governance approach to central counterparties. This approach sits well in the overall paradigm which shaped the regulation of the derivatives market pre-crisis: Seen as transactions among professionals, public authorities exempted the market from their oversight and delegated the responsibility to private association and market discipline (Pagliari 2012, 2013). Nevertheless, as the discussion of the Giovannini reports demonstrates the paradigm was not purely oriented towards private self-regulation but included points of critical engagement with the downsides of the prevalent system. However, the new position which CCPs occupy since the crisis was not envisioned.

4 Moving the problem around: The unfinished reform in EMIR

To regulate the OTC derivative market by incentivising and implementing mandatory clearing is by itself not without problems. Although CCPs were the chosen vehicle to reform the OTC derivatives market, they do not directly reduce the counterparty risk in this market (see section 2). They provide transparency by structuring the opaque over-the-counter market and some collateralisation of previously un-collateralised transactions (Singh 2010). Singh (2011, p. 4) remarks that the post-crisis regulatory efforts were driven by the intention to move the derivative parts of to-big-to-fail banks to other entities and to reduce their net size by higher multilateral netting through CCPs. Therefore CCPs are to be seen as "derivative warehouses" or "risk nodes" of the financial system which create more systemically important financial institutions on top of the existing ones (ibid., for an alternative proposal, also see). In addition, the decision to not just mandate clearing but to do so via private market infrastructures is at the core of the problematic governance arrangement. Therefore it is worthwhile to take a step back and first tackle the question why private CCPs ended up to be the means to regulate the OTC derivatives market. The following account of this "ideational adverse selection" (Underhill 2015, p. 2) relies on the continuous influence of the pre-crisis regulatory paradigm for derivatives as described by Pagliari (2012, 2013)). Braun's (2015) work on the emergency crisis response and the ensuing institutional design in the Eurozone provides the framework to explain this process.
The early days of post-crisis reform efforts were characterised by a perception of urgency to tackle the blatant shortcomings of the regulatory framework (Capoccia and Kelemen 2007, for critical junctures in general, see). The decision to utilise CCPs to regulate the OTC market was taken during this phase of "emergency crisis management" (Braun 2015, p. 422; see also Pagliari 2013). To properly account for the problems which ensued afterwards in building up a regulatory framework during the phase of "purposeful institutional building" (Braun 2015, p. 422), it is crucial to understand why the decision in favour of CCPs was taken during this emergency crisis management. Explosive crises prohibit strategic action and fully purposeful design of responses to unveiled shortcomings (Braun

2015: 423). In contrast to conception of purposeful and strategic actors, the bricoleur, who rearranges existing tools to fit the problem at hand (see Carstensen 2011, p. 154), better captures the dynamics of the early post-crisis regulation. While the concept of bricolage provides a better grip on the agency of actors during emergency responses, it fails to answer the question why certain solutions are at hand to be combined across ideological boundaries in reaction to crises (Braun 2015, p. 423). Braun's (ibid., pp. 424-5) notion of crisis preparedness captures the extent to which the pivotal actors were prepared for this kind of event (in Braun's empirical case the co-occurrence of a systemic banking and a sovereign debt crisis, in the case of CCPs the massive contagion through the widespread imprudent use of CDSs) or whether the financial crisis was even beyond the scope of their contingency plans. As an adaption of Braun's framework for the Eurozone and the ECB, we differentiate between the status quo pre-crisis and potential critiques which both provide elements for the emergency toolkit and abnormal events which have not been imagined beforehand.

The pre-crisis paradigm rested on three pillars: (1) the decision to exempt some markets and institutions from public regulatory oversight, (2) the move from "command-and-control" regulation to regulatory forms based on the market and (3) the granting of an official public role to self-regulatory initiatives of financial associations – especially on the transnational level. In the case of OTC derivatives, this paradigm was most strikingly illustrated by the complete lack of regulation of the market in Europe and the explicit exemption of OTC derivatives from federal oversight in the US Commodity Futures Modernization Act in 2000 (for related examples for hedge funds and CRAs, see Pagliari 2012, p. 47; with regard to the CFMA, see also Funk and Hirschman 2014). These decisions were partially legitimised with the skill and sophistication of the market participants while regulators struggled to cope with the complexity and pace of innovation with the markets. To rely on market-based self-regulation and "hard wire" (Pagliari 2012, p. 48) them into regulatory policies appeared as a solution to the limits of regulators and the needs of the market.

The crisis revealed the shortcomings of this pre-crisis paradigm. However, the regulatory response first remained within the old paradigm by urging the industry to migrate OTC derivatives to CCPs. While the US authorities achieved this swiftly, the European authorities needed to threaten the reluctant industry with higher capital charges on bilateral transactions (ibid., pp. 53-4). This shift can be illustrated alongside the three G20 crisis summits in Washington, London and Pittsburgh. Usually, the declaration of the G20 Summit Pittsburgh 2009 is cited as the crucial document which included the agreement to implement obligatory clearing until end-2012 (see G20 2009b). However, already the final declarations of the summits in Washington 2008 and London 2009 include clearing infrastructures to stabilise the OTC derivatives market (see G20 2008, p. 4, 2009a, p. 3). The Washington declaration refers to actions taken by some of the national governments and private actors to move credit default swaps (CDSs) to CCPs. The preparatory documents for the German and US governments also feature the recommendation to move derivatives to CCPs (see Issing Committee 2008, p. 4; President's Working Group on Financial Markets 2008). This mirrors the request by the European Commission to move these derivatives to clearing infrastructures by July 31, 2009 to which the industry acceded (European Commission 2009a). However, only in Pittsburgh the G20 government announced mandatory clearing and therefore resigning from the first pillar of the pre-crisis paradigm. While this marked a substantial departure from the previous paradigm, this step did not go as far as many policymaker and commentators have demanded (Pagliari 2012, p. 54; Hertig 2012). The reform did not encompass all derivatives and included significant exemptions for non-financial end-users. The reform also did not touch ISDA's[3] authority over the operational infrastructure of the remaining OTC market (Pagliari 2012, p. 60).

In summary, the post-crisis regulatory efforts reshaped the public-private divide by not replacing self-regulatory measures but locating them on top of public regulation backed by public authorities equipped with coercive authority (ibid., pp. 60-1). However, this affects pillars one and three of the pre-crisis paradigm but the post-crisis regulatory landscape still relies on market discipline as a mean to re-regulate the OTC-derivatives market. The framework for the rules themselves constitutes the continuation of the pre-crisis paradigm. The decision to clear derivatives through private CCPs which are in competition with each other (or if not embracing at least not restricting the competition) follows this logic. The influential CPSS-IOSCO Principles of Financial Market Infrastructures (2012) provide a good example of this partial shift (Underhill 2015, regarding IOSCO itself, see). The core principles for financial market infrastructures are efficiency and effectiveness and competition remains the mechanism to enhance these (CPSS-IOSCO 2012, p. 117). However, the report balances these principles with a concern for financial stability which not necessarily is achieved with market discipline (ibid., p. 11). The report also acknowledges the variety of ways in which CCPs might be organised – included public operation by the central bank. This stands in contrast to the earlier CPSS-IOSCO Recommendations for Central Counterparties CPSS-IOSCO (2004). Because CCPs played no role in the pre-crisis status quo or pre-crisis critique of the paradigm, we have good evidence to argue that CCPs were indeed the "unlikely heros" (Norman 2011, p. 3) of the financial crisis which provided a welcomed solution to the role of the OTC derivatives market in the crisis. CCPs were obviously not part of the pre-crisis regulatory status quo neither did the discussion of the high level advisory groups imagined their role in moving the regulation from the private to the public of the public-private divide in governing finance (for a stark example from the US, see Kroszner 2006). The

[3]The International Swaps and Derivatives Association is a private industry association. It is best know for its ISDA Master Agreement which is used to standardise derivative contracts.

delegation of regulatory responsibility to private actors prohibited contingency plans on side of the public authorities. Because no CCP failed during the financial crisis and private actors turned to the infrastructures in times of high uncertainty regarding counterparty risk, CCPs emerged as resilient entities to provide stability and transparency during liquidity crises (cf. Pagliari 2013; Monnet 2010; Brunnermeier 2009). As a consequence, the reliance on private and competing CCPs remains the legacy of the pre-crisis paradigm.

This analytical step illustrated the reasons to answer the question why an "ideational adverse selection" (Underhill 2015, p. 2) allowed private CCPs in competition with each other to constitute a corner stone of the post-crisis financial system. The next step answers the question why these two parts are accompanied by the last part of the triad of private risk management, competition and splintered supervision. To explain the "purposeful institution building" (Braun 2015, p. 420) which ensued after the decision to implement mandatory clearing was taken at the critical juncture in 2009, the following analysis concerns the legislative history of EMIR. It relies on policy documents by the major European bodies, interviews as well as 86 consultation responses by national public bodies as well as trading and clearing platforms.

The arrangement is the result of a process which started with a communication by the European Commission in 2009 (note that the legislative process was launched before the G20 included obligatory clearing in its summit statement later that year). The legislative process commenced with two consultation periods between which another communication was published. This communication is of special interest because it explicitly discusses the possibility to grant ESMA the power to authorise CCPs and direct supervisory powers to tackle regulatory arbitrage – although the communication acknowledges national fiscal liabilities as an obstacle to achieve this (European Commission 2009b, pp. 4-5). This proposal follows the recommendation of the de Larosière Report (see De Larosière Group 2009, p. 53). In contrast, the consultation responses featured much opposition to the centralisation of supervision: Industry (see London Stock Exchange 2009, p. 3; BATS Europe 2010, p. 3; CME Group Inc. 2010, p. 3; Deutsche Börse Group 2010, p. 11) and national governments – most strongly the British government (see FSA/HM Treasury/BoE 2010, pp. 2-3, 7; but also BMF/OeNB 2010, p. 2; Italian Ministry of Finance 2010, p. 4) – argued in favour of national supervision. The two main arguments of the opponents were the national fiscal liabilities as well as the competence and proximity of the national authorities vis-a-vis the European authorities[4]. The industry opposition is crucial because - as Mügge (2010) showed – their perception of their competitive position is the crucial factor for European financial market integration. Mügge (ibid., p. 140) reports that the German government was reluctant to any action in to field of clearing and settlement during pre-crisis finan-

[4]The regulations which establish the ESAs were adopted in late 2010 after the second consultation.

cial market liberalisation in Europe – probably to shield the silo business model of Deutsche Börse. The French government also opposed a liberalisation of such services in the interest of French banks and mainly BNP Parisbas (who provide custody services which would have been endangered, ibid., p. 140). Mügge notes that in this case only two large players – Deutsche Börse and BNP Parisbas – were able to stall further integration to protect their competitive position.

In contrast, BME Group (2010, p. 6) – a smaller Spanish CCP - was the only clearing house which argued in favour of some centralisation regarding authorisation and the refusal of changes of the risk management. ICAP (2010, p. 5) – one of the major dealer-to-dealer brokers – remarked that national authorities should not have the discretion to handle non-compliance. However, these favourable statements do not carry much weight in contrast to the major players like LCH.Clearnet, CME or Eurex (represented by Deutsche Börse). Additionally, the Dutch and Hungarian governments expressed their support for a stronger role of the European level in the supervision of CCPs (Dutch Ministry of Finance 2010, pp. 3-4; Hungarian Ministry for National Economy 2010, pp. 1-2). The ECB only pushed strongly for an adequate representation of the central banks in the regulatory and supervisory framework (ECB 2010, p. 2; again later ECB 2011, p. 4). This mirrors earlier statement on the topic by the ECB as well as other actors (see ESCB-CESR 2009; CPSS 2005) but was not incorporated until the second resolution on the regulation of the European Parliament only months before the final adoption of EMIR (see below).

The proposal of the European Commission which resulted from this consultation phase already features the major pillars of the final legislation (European Commission 2010). Subsequently, the political dialogue with the European Council[5], the European Parliament (EP) as well as the ECB and the European Economic and Social Committee (EESC 2011) ensued. Besides the push of the ECB for stronger central bank involvement, the first EP resolution (see European Parliament 2011a) which was adopted following the Langen Report drafted by the Parliament's Committee on Economic and Financial Affairs (see European Parliament 2011b) entailed a major extension of ESMA supervisory powers in contrast to the Commission proposal. However, the proposed centralisation of competence was scaled back in the second resolution which includes stronger restrictions of the power of the college than the Commission's proposal due to the need of consensual decision in the college. In contrast, ESMA is granted the power to validate changes in a CCP's risk management (see European Parliament 2011c). After the second resolution in March 2012, no substantial changes were made until the final adoption of the regulation in July 2012.

The policy documents and consultation responses which were published during the legislative process of EMIR point clearly to the national fiscal liabilities and the (perception of) ESMA's limited

[5]Unfortunately, no documents of the ECOFIN meetings are available.

capabilities as the two decisive factors which prohibited the centralisation of CCP supervision in Europe. With regard to mandatory clearing and the treatment of non-financial counterparties, Hertig (2012, pp. 333-335) identifies regulatory capture by using the same data on the public consultations. Nevertheless, he admits that EMIR is not a textbook example of regulatory capture (ibid., p. 329). Although regulatory capture is a recurring phenomenon in financial regulation (with regard to pre-crisis regulation, see for example Baker 2010; Tsingou 2004), the explanatory power in this case is limited. With regard to other parts of EMIR, Hertig fails to empirically illustrate the causal process of regulatory capture besides the overlap of private sector interests and the final regulation (cf. Young 2012, p. 667).[6]

This political process was embedded in constitutional constraints which include a large extent of uncertainty regarding the European legal framework. However, the policy documents which were investigated do not discusses possible legal constraints to grant ESMA additional discretion. Nevertheless, it is not unusual for the political and the legal discourse to be separated (Interview # 2 with legal expert). The European Treaties do not contain any clear statement about the possibility to establish agencies. Consequently, the jurisprudence in this issues mainly relies on decisions of the European Court of Justice (ECJ). The 1958 Meroni decision[7] is the pivotal ruling in this regard. The case concerned the delegation of fining competences by the High Authority of the European Coal and Steel Community to a private entity (the fine was levied due to the import of ferrous scrap). The European Court of Justice annulled the fine on the ground that the delegation of the delegation by the High Authority was not covered by the Treaty due to the illegal delegation of discretionary powers[8] (see Meroni v High Authority 1958; also Busuioc 2013, p. 114; for a critical view of the applicability, see Chamon 2010). This ruling had a long lasting chilling effect on the agencification in the European Union because of uncertainty over the applicability and scope of the Meroni doctrine (Interview # 2 with legal expert). This uncertainty was resolved in 2014 in the Short Selling case (UK v Parliament and Council 2014) when the ECJ affirmed that ESMA's competence to ban short selling in times of stress is within the constitutional boundaries of the Treaties (Interview # 2 with legal expert). After the Short Selling decision, the European Supervisory Agencies (ESAs) could be endowed with larger competences then they currently enjoy under the European System of Financial Supervisors (ESFS) - given that the principles of subsidiarity and proportionality are attended, the additional competences have a clear outline and EU institutions retain sufficient control (SAFE Policy Blog 2017). These

[6] In process tracing terminology, the available evidence passes the hoop test (which demands necessary but not unique evidence) but does not provide indications for a smoking gun test (which demands unnecessary but unique evidence, cf. Bennett and Checkel 2015, p. 17).

[7] Due to its large impact also called the Meroni doctrine.

[8] The Treaty of Paris, officially labeled Treaty establishing the European Coal and Steel Community

requirement are unlikely to prohibit a future centralisation of the supervision of CCPs. In contrast, legal uncertainty surrounding the Meroni doctrine and the resulting chilling effect were still present when the current supervisory regime was drafted. The three elements – national fiscal liabilities, a constrained European supervisor and an uncertain constitutional situation – are due to special characteristics of the European Union and its political economy. The evidence suggests that all of them equally contributed to the unfinished reform in EMIR.

To conclude this analysis, the installation of private CCPs to reform and stabilise the OTC derivatives market is a legacy of the pre-crisis paradigm. While recommendations like the De Larosière Report envisioned otherwise, the idiosyncrasies of the European Union led to the restoration of the triad of private risk management, competition and national supervision within the post-crisis regulatory attempts. Therefore, EMIR remains an unfinished reform. But as the analysis also illustrated, this path is cluttered with the remaining elements of the efforts to resolve the problem. These efforts cautioned against the race to the bottom which might arise from the regulatory arbitrage of competing CCPs (see Giovannini Group 2003). This warning is revived now in the discussions surrounding Brexit and the Capital Markets Union (CMU) which will likely reshape the current arrangement.

5 Conclusion: Brexit and CMU as the critical juncture?

The financial crisis was the major critical juncture for financial regulation in the recent decades. However, for a variety of reasons this critical juncture has led to regulatory reforms which were timid and as the previous section demonstrated partially regressing to pre-crisis patterns (see also Engelen et al. 2011; Rixen 2013; Kessler and Wilhelm 2013; Thiemann, Birk, and Friedrich forthcoming). The current dynamics which were sparked by Brexit but also the CMU might serve as the next critical juncture which provides the opportunity to finalise the reform which was started in 2009.

London currently hosts the majority of the euro-clearing: 75 percent of interest-rate euro-derivatives are cleared in London which amounts to a daily turnover of \$ 574 billion and \$ 77 billion in margins are held as collateral against these trades. The largest European clearing house LCH.Clearnet alone accounts for an outstanding volume of € 84.3 trillion in interest rate derivatives (European Commission 2017d, p. 48). A lot is at stake for London as a financial centre. For example, a much cited Ernst and Young report came to the conclusion that London might lose about 83,000 jobs if the euro-clearing was forced out of the UK and into the EU (Financial Times 2016). Financial centres in continental Europe try to benefit from the British departure and lobby to move the clearing business to cities like Frankfurt or Paris. The dynamics which surround Brexit are accompanied by the ones sparked by the

CMU. The CMU is one of the European Commission's core projects and aims to revive the European securitisation market to spur economic growth (see also Friedrich and Thiemann forthcoming). The legislative process which is supposed to result in the Capital Markets Union started with the European Commission action plan in September 2015 and CCPs are supposed to take a pivotal position in the project (European Commission 2016, 2017e,g; Véron 2014; Juncker 2015). It got deeply intertwined with Brexit because the most vocal opposition to a centralised supervision will leave with the British departure from the EU (cf. Bank of England 2015; HM Treasury 2015). Additionally, the new "competition politics" (Mügge 2010) of continental CCPs shape the current discussions about the CMU (see European Commission 2017a). The intra-industry conflict can be currently observed in the fight over the correct estimated costs of the relocation of the euro-clearing. Shortly after the referendum, the major British CCP LCH.Clearnet started the dispute by estimating the relocation costs at $ 77 to $ 100 billion (Bloomberg 2016, 2017b). These numbers were recently challenged by German Eurex which judged them unrealistic and responded with less $ 10 billion as the likely costs of relocation (Bloomberg 2017a; see also European Commission 2017e, p. 64). While the industry and some national governments engage in "competition politics", the European Commission uses the CMU and Brexit to insist on a centralisation of supervision (European Commission 2017e,f). These dynamics meet a changed environment. Since the adoption of EMIR, two of the three obstacles have disappeared or shrunk. The 2014 Short Selling decision lifted the constitutional barriers of centralising the CCP supervision and opened up the possibility of delegating further supervisory powers to ESMA. In addition, ESMA which has just been established in 2012 increased its experience and resources over the last years. This could give the European supervisor greater credibility as the possible European supervisor for CCPs. In this situation, the threat of regulatory and supervisory arbitrage becomes a rallying point for actors which want to centralise the supervision of CCPs on the European level. The history of warnings and critiques which never manifested in a corresponding governance regime now provide the material to argue in favour of further centralisation. Brexit and the CMU might therefore prove to be an opportunity to correct deficiencies in the European financial market governance (cf. Zettelmeyer 2017). But as the regulatory reforms after the financial crisis show, critical junctures do not guarantee change.

References

BATS Europe (2010). *Response to the European Commission consultation on derivatives and market infrastructures*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

BME Group (2010). *Response to the European Commission consultation on derivatives and market infrastructures*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

Baker, Andrew (2010). "Restraining regulatory capture? Anglo-America, crisis politics and trajectories of change in global financial governance". In: *International Affairs* 86 (3), pp. 647–663.

Bank for International Settlements (2017). *Statistical release OTC derivatives statistics at end-December 2016*.

Bank of England (1999). *Financial Stability Review*. Issue No. 6.

— (2015). *The Bank of England's Response to the European Commission Green Paper: Building a Capital Markets Union*.

Bennett, Andrew and Jeffrey T. Checkel (2015). "Process tracing: From philosophical roots to best practices". In: *Process Tracing: From Metaphor to Analytic Tool*. Ed. by Andrew Bennet and Jeffrey T. Checkel. Cambridge: Cambridge University Press, pp. 3–38.

Bloomberg (2016). *LSE CEO Says Loss of London Clearing May Cost $ 77 Billion*. URL: https://www.bloomberg.com/news/articles/2016-11-01/lse-ceo-says-loss-of-london-clearingmay-cost-77-billion-euros.

— (2017a). *Dire Brexit Warnings About London Clearing Called Into Question,* URL: https://www.bloomberg.com/news/articles/2017-06-09/dire-brexit-warnings-about-londonclearing-called-into-question.

— (2017b). *LSE Raises Estimate for Loss of London Clearing to $ 100 Billion,* URL: https://www.bloomberg.com/news/articles/2017-05-22/lse-raises-estimate-for-loss-oflondon-clearing-to-100-billion.

Borio, Claudio (2004). *Market distress and vanishing liquidity: anatomy and policy options*. Working Paper No 158. BIS. URL: http://www.bis.org/publ/work158.pdf.

Braun, Benjamin (2015). "Preparedness, crisis management and policy change: The euro area at the critical juncture of 2008–2013". In: *The British Journal of Politics and International Relations* 17.3, pp. 419–441.

Brunnermeier, Markus K (2009). "Deciphering the liquidity and credit crunch 2007–2008". In: *The Journal of Economic Perspectives* 23.1, pp. 77–100.

Busuioc, Madalina (2013). "Rule-Making by the European Financial Supervisory Authorities: Walking a Tight Rope". In: *European Law Journal* 19.1, pp. 111–125.

CME Group Inc. (2010). *Response to the European Commission consultation on derivatives and market infrastructures*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

Capoccia, Giovanni and R Daniel Kelemen (2007). "The study of critical junctures: Theory, narrative, and counterfactuals in historical institutionalism". In: *World politics* 59.3, pp. 341–369.

Carstensen, Martin B (2011). "Paradigm man vs. the bricoleur: bricolage as an alternative vision of agency in ideational change". In: *European political science review* 3.1, pp. 147–167.

Chamon, Merijn (2010). "EU agencies: does the Meroni Doctrine make sense?" In: *Maastricht Journal of European and Comparative Law* 17.3, pp. 281–305.

Chamorro-Courtland, Christian (2011). "The Trillion Dollar Question: Can a Central Bank Bail out a Central Counterparty Clearing House Which Is Too Big to Fail". In: *Brook. J. Corp. Fin. and Com. L.* 6, p. 433.

Committee on Payment and Settlement Systems and International Organization of Securities Commissions (2004). *Recommendations for Central Counterparties*.

— (2012). *Principles for Financial Market Infrastructures*.

Committee on Payment and Settlement Systems (2005). *Central bank oversight of payment and settlement systems*. URL: http://www.bis.org/cpmi/publ/d68.pdf.

De Larosière Group (2009). *Report of the High-Level Group on Financial Supervision in the EU*. Report. High-Level Group on Financial Supervision in the EU. URL: http://www.ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf.

Deutsche Börse Group (2010). *Response to the European Commission consultation on derivatives and market infrastructures*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

Domanski, Dietrich, Leonardo Gambacorta, and Cristina Picillo (2015). "Central clearing: trends and current issues". In: *BIS Quarterly Review*, pp. 58–76.

Duffie, Darrell and Haoxiang Zhu (2011). "Does a Central Clearing Counterparty Reduce Counterparty Risk?" In: *The Review of Asset Pricing Studies* 1, pp. 76–95.

Dutch Ministry of Finance (2010). *Response to the European Commission consultation on derivatives and market infrastructures*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

Engelen, Ewald et al. (2011). *After the Great Complacence: Financial Crisis and the Politics of Reform*. Oxford: Oxford University Press.

European Central Bank (2010). *Response to the European Commission consultation on derivatives and market infrastructures*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

— (2011). "Opinion of the European Central Bank of 13 January 2011 on a proposal for a regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories". In: *Official Journal of the European Union* C 57, pp. 1–24. URL: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2011:057:FULL&from=EN.

— (2015). *Euro Money Market Survey*.

European Commission (2009a). *Ensuring efficient, safe and sound derivatives markets*. Communication from the Commission COM(2009) 332. European Commission. URL: http://www.eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009DC0332&from=EN.

— (2009b). *Ensuring efficient, safe and sound derivatives markets: Future policy actions*. Communication from the Commission COM(2009) 563. European Commission. URL: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009DC0563&from=EN.

— (2010). *Proposal for a Regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories*. Communication from the Commission COM(2010) 484. European Commission. URL: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0484:FIN:EN:PDF.

— (2016). *Green Paper: Building a Capital Markets Union*. Green Paper COM(2015) 63. European Commission. URL: http://ec.europa.eu/finance/consultations/2015/capital-markets-union/docs/greenpaper_en.pdf.

European Commission (2017a). *Feedback statement on the public consultation on the operations of the European Supervisory Authorities having taken place from 21 March to 16 May 2017*. URL: https://ec.europa.eu/info/sites/info/files/2017-operations-esa-summary-of-responses_en.pdf.

— (2017b). *Feedback statement on the public consultation on the operations of the European Supervisory Authorities having taken place from 21 March to 16 May 2017*. Report from the Commission COM(2016) 857. European Commission. URL: https://ec.europa.eu/info/sites/info/files/2017-operations-esa-summary-of-responses_en.pdf.

— (2017c). *Proposal for a Regulation of the European Parliament and the Council amending Regulation (EU) No 648/2012 as regards the clearing obligation, the suspension of the clearing obligation, the reporting requirements, the risk-mitigation techniques for OTC derivatives contracts not cleared by a central counterparty, the registration and supervision of trade repositories and the requirements for trade repositories*. Communication from the Commission COM(2017) 208.

European Commission. URL: https://ec.europa.eu/info/law/better-regulation/initiatives/com-2017-208_en.

— (2017d). *Impact Assessment accompanying the document COM(2017) 331*. Commission Staff Working Document SWD(2017) 246. European Commission. URL: https://ec.europa.eu/transparency/regdoc/rep/10102/2017/EN/SWD-2017-246-F1-ENMAIN-PART-1.PDF.

— (2017e). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions on the Mid-Term Review of the Capital Markets Union Action Plan*. Communication from the Commission COM(2017) 292. European Commission. URL: https://ec.europa.eu/transparency/regdoc/rep/1/2017/EN/COM-2017-292-F1-EN-MAINPART-1.PDF.

— (2017f). *Communication from the Commission to the European Parliament, the Council and the European Central Bank: Responding to challenges for critical financial market infrastructures and further developing the Capital Markets Union*. Communication from the Commission COM(2017) 225. European Commission.

— (2017g). *Consultation document on post-trade in a Capital Market Union: dismantling barriers and strategy for the future*. URL: https://ec.europa.eu/info/consultations/finance-2017-posttrade_en.

European Economic and Social Committee (2011). "Opinion of the European Economic and Social Committee on the 'Proposal for a Regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories'". In: *Official Journal of the European Union* C 54, pp. 44–47. URL: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2011:057:FULL&from=EN.

European Parliament (2011a). *Draft report on the proposal for a regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories*. Draft report. Committee on Economic and Monetary Affairs. URL: http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+COMPARL+PE-456.945+01+DOC+PDF+V0//EN&language=EN.

— (2011b). "Amendments of the European Parliament, adopted on 5 July 2011, to the proposal for a regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories". In: *Official Journal of the European Union* 2013 C 33. URL: http://www.eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011AP0310&from=EN.

— (2011c). "European Parliament legislative resolution of 29 March 2012 on the proposal for a regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories”. In: *Official Journal of the European Union* 2013: C 257. URL: http://www.eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011AP0310&from=EN.

European System of Central Banks and Committee of European Securities Regulators (2009). *Recommendations for Securities Settlement Systems and Recommendations for Central Counterparties in the European Union*. URL: https://www.ecb.europa.eu/pub/pdf/other/pr090623_escb-cesr_recommendationsen.pdf.

European Systemic Risk Board (2016). *Macroprudential policy beyond banking: an ESRB strategy paper*.

Financial Service Authority, HM Treasury and Bank of England (2010). *Response to the European Commission consultation on derivatives and market infrastructures*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

Financial Stability Board (2014). *Strengthening Oversight and Regulation of Shadow Banking: Regulatory framework for haircuts on non-centrally cleared securities financing transactions*.

— (2015). *Transforming Shadow Banking into Resilient Market-based Finance. An Overview of Progress*.

— (2017). *Analysis of Central Clearing Interdependencies*. report.

Financial Times (2016). *Losing euro-denominated clearing would cost London 83,000 jobs*. URL: https://www.ft.com/content/b3e34540-a9a1-11e6-809d-c9f98a0cf216.

Friedrich, Jan and Matthias Thiemann (forthcoming). “Capital Markets Union: The Need for Common Laws and Common Supervision”. In: *DIW Quarterly Journal of Economic Research*.

Funk, Russell J and Daniel Hirschman (2014). “Derivatives and deregulation: Financial innovation and the demise of Glass–Steagall”. In: *Administrative Science Quarterly* 59.4, pp. 669–704.

G20 (2008). *Declaration of the Summit on Financial Markets and the World Economy*. Statement of the Washington Summit.

— (2009a). *Declaration on Strengtheening the Financial System*. Statement of the London Summit.

G20 (2009b). *Leaders’ Statement: The Pittsburgh Summit*. URL: https://www.g20.org/Content/DE/StatischeSeiten/Breg/G7G20/Anlagen/G20-erklaerung-pittsburgh-2009-en.pdf?__blob=publicationFile&v=3.

Giovannini Group (2001). *Cross-Border Clearing and Settlement Arrangements in the European Union*.

— (2003). *Second Report on EU Clearing and Settlement Arrangements*.

Glassermann, Paul, Ciamac C. Moallemi, and Kai Yuan (2015). *Hidden Illiquidity with Multiple Central Counterparties*. Working Paper 15-07. US Office of Financial Research. URL: https://www0.gsb.columbia.edu/faculty/pglasserman/Other/OFRhidden.pdf.

HM Treasury (2015). *UK Response to the Commission Green Paper on Capital Markets Union: Building a Strong Capital Markets Union*.

Haldane, Andrew G. (2009). “Rethinking the Financial Network”. Speech delivered at the Financial Student Association, Amsterdam. URL: http://www.bis.org/review/r090505e.pdf.

Hellwig, Martin (2010). *Capital Regulation after the Crisis: Business as Usual?* Preprint No. 2010/31. Max Planck Institute for Research on Collective Goods. URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1645224.

Hertig, Gerard (2012). “Post-Financial Crisis Trading and Clearing Reforms in the EU: A Story of Interest Groups with Magnified Voice”. In: *Financial Regulation and Supervision: A Post-Crisis Analysis*. Ed. by Eddy Waymeersch, Klaus J. Hopt, and Guido Ferrarini. Oxford: Oxford University Press, pp. 321–336.

Hungarian Ministry for National Economy (2010). *Response to the European Commission consultation on derivatives and market infrastructures*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

ICAP (2010). *Response to the European Commission consultation on derivatives and market infrastructures*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

Issing Committee (2008). *New Financial Order - Recommendations by the Issing Committee: Part I*.

Italian Ministry of Finance (2010). *Response to the European Commission consultation on derivatives and market infrastructures*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

Juncker, Jean-Claude (2015). *Completing Europe’s Economic and Monetary Union*. Five Presidents Report. European Commission. URL: https://ec.europa.eu/commission/sites/beta-political/files/5-presidentsreport_en.pdf.

Kessler, Wilhelm and Benjamin Wilhelm (2013). “Financialization and the Three Utopias of Shadow Banking”. In: *Competition and Change* 17, 248—64.

Krahnen, Jan Pieter and Loriana Pelizzon (2016). *"Predatory" margins and the regulation and supervision of central counterparty clearing houses (CCPs)*. White Paper No. 41. Frankfurt am Main: SAFE Research Center. URL: http://www.safe-frankfurt.de/fileadmin/user_upload/editor_common/Policy_Center/Krahnen_Pelizzon_CCP.pdf.

Kroszner, Randall S. (2006). *Central counterparty clearing: History, innovation, and regulation*. Speech given at the “Issues Related to Central Counterparty Clearing” Conference of Federal Reserve Bank of Chicago and European Central Bank. URL: www.ecb.int/events/conferences/html/ccp.en.html.

Lamfalussy Committee (2001). *Final Report of the Committee of Wise Men on the Regulation of European Securities Markets*. Report to the European Commission. URL: http://ec.europa.eu/internal_market/securities/docs/lamfalussy/wisemen/final-report-wise-men_en.pdf.

London Stock Exchange (2009). *Response to the European Commission consultation "Enhancing the resilience of OTC derivatives markets"*. URL: http://www.ec.europa.eu/internal_market/consultations/2009/derivatives_en.htm.

Maijoor, Steven (2017). "Closing Keynote Speech". Speech delivered at the CMU Mid-Term Review Public Hearing of the European Commission. URL: https://www.esma.europa.eu/press-news/esma-news/steven-maijoordelivers-keynote-cmu-mid-term-review.

Meroni & Co Industrie Metallurgiche SpA v High Authority Case 9/56 (1958). *ECR 133*.

Moloney, Niamh (2015). "Banking Union and the Implications for Financial Market Governance in the EU: Convergence or Divergence". In: *European Banking Union*. Ed. by Danny Busch and Guido Ferrarini. Oxford: Oxford University Press, pp. 524–563.

Monnet, Cyril (2010). "Let's make it clear: How central counterparties save(d) the day". In: *Federal Reserve Bank of Philadelphia Business Review*, pp. 1–10.

Mügge, Daniel (2010). *Widen the Market, Narrow the Competition: Banker Interests and the Making of a European Capital Market*. Colchester: ECPR Press.

Norman, Peter (2011). *The risk controllers: central counterparty clearing in globalised financial markets*. Chichester, UK: John Wiley and Sons.

Oesterreichische Nationalbank and Austrian Ministry of Finance (BMF) (2010). *Response to the European Commission consultation on derivatives and market infrastructures: BMF/OeNB Comments from July 5th, 2010*. URL: http://ec.europa.eu/finance/consultations/2010/derivatives/index_en.htm.

Pagliari, Stefano (2012). "Who governs finance? The shifting public–private divide in the regulation of derivatives, rating agencies and hedge funds". In: *European Law Journal* 18.1, pp. 44–61.

Pagliari, Stefano (2013). "Public Salience and International Financial Regulation: Explaining the International Regulation of OTC Derivatives, Rating Agencies, and Hedge Funds". unpublished Phd thesis. PhD thesis. University of Waterloo.

Pozsar, Zoltan et al. (2010). *Shadow Banking*. Staff Report No. 458. Federal Reserve Bank of New York.

President's Working Group on Financial Markets (2008). *Statement of the President's Working Group on Financial Markets*.

Quaglia, Lucia (2010). *Governing financial services in the European Union: banking, securities and post-trading*. London: Routledge.

Riles, Annelise (2014). “Managing Regulatory Arbitrage: A Conflict of Laws Approach”. In: *Cornell International Law Journal* 63, pp. 63–119.

Rixen, Thomas (2013). “Why reregulation after the crisis is feeble: Shadow banking, offshore financial centers, and jurisdictional competition”. In: *Regulation and Governance* 7.4, pp. 435–459.

SAFE Policy Blog (2017). *Integrated European Financial Supervision: Interview with Matthias Goldmann*. URL: http://safe-frankfurt.de/policy-blog/details/integrated-european-financialsupervision.html.

Schneiberg, Marc (2007). “What's on the path? Path dependence, organizational diversity and the problem of institutional change in the US economy, 1900–1950”. In: *Socio-Economic Review* 5.1, pp. 47–80.

Singh, Manmohan (2010). *Collateral, Netting and Systemic Risk in the vOTC Derivatives Market*. Working Paper WP/10/99. IMF.

— (2011). *Making OTC Derivatives Safe — A Fresh Look*. Working Paper WP/10/99. IMF.

Steigerwald, Robert S. (2013). “Central Counterparty Clearing”. In: *Understanding Derivatives: Markets and Infrastructure*. Ed. by Federal Reserve Bank of Chicago, pp. 12–26. URL: https://www.chicagofed.org/publications/understanding-derivatives/index.

Swidler, Ann (1986). “Culture in Action: Symbols and Strategies”. In: *American Sociological Review* 51 (2), pp. 273–286.

Thiemann, Matthias (2012). “‘Out of the shadows?’ Accounting for Special Purpose Entities in European Banking Systems”. In: *Competition and Change* 16.1, pp. 37–55.

— (2014). “In the shadow of Basel: how competitive politics bred the crisis”. In: *Review of International Political Economy* 21.6, pp. 1203–1239.

Thiemann, Matthias (forthcoming). *The Growth of Shadow Banking: A Comparative Institutional Analysis*. Cambridge: Cambridge University Press.

Thiemann, Matthias, Marius Birk, and Jan Friedrich (forthcoming). “Much ado about nothing? Macroprudential ideas and the post-crisis regulation of shadow banking”. In: *Kölner Zeitschrift für Soziologie und Sozialpsychologie*.

Thiemann, Matthias and Jan Lepoutre (2017). “Stitched on the Edge: Rule Evasion, Embedded Regulators, and the Evolution of Markets”. In: *American Journal of Sociology* 122.6, pp. 1775–1821.

Tsingou, Eleni (2004). *Policy preferences in financial governance: public-private dynamics and the prevalence of market-based arrangements in the banking industry*. CSGR Working Paper No. 131/04. Centre for the Study of Globalisation of Regionalisation.

Underhill, Geoffrey R. D. (2015). "The Emerging Post-Crisis Financial Architecture: The Path-Dependency of Ideational Adverse Selection". In: *The British Journal of Politics and International Relations* 17, pp. 461–493.

United Kingdom of Great Britain and Northern Ireland v European Parliament and Council of the European Union (2014). *ECR 133*.

Véron, Nicoloas (2014). *Defining Europe's Capital Markets Union*. Policy Contribution Issue 2014/12. Bruegel. URL: http://bruegel.org/wpcontent/uploads/imported/publications/pc_2014_12_cmu.pdf.

Wendt, Froukelien (2015). *Central Counterparties: Adressing their Too Important Too Fail Nature*. Working Paper 15/21. IMF. URL: https://www.imf.org/external/pubs/ft/wp/2015/wp1521.pdf.

Young, Keving (2012). "Transnational regulatory capture? An empirical examination of the transnational lobbying of the Basel Committee on Banking Supervision". In: *Review of International Political Economy* 19 (4), pp. 663–688.

Zettelmeyer, Jeromin (2017). "After Brexit: Rebooting Euro Area Financial Regulation". In: *Changing Geography of Finance and Regulation in Europe*. Florence: European University Institute, pp. 95–110.