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This is the final peer-reviewed author's accepted manuscript (postprint) of the following publication:

Published Version:

Disentangling derivatives: international policy reforms concerning central counterparties / Quaglia Lucia; Spendzharova A.. - In: JOURNAL OF ECONOMIC POLICY REFORM. - ISSN 1748-7870. - STAMPA. - 25:3(2022), pp. 305-321. [10.1080/17487870.2021.1942874]

This version is available at: <https://hdl.handle.net/11585/897204> since: 2023-04-04

Published:

DOI: <http://doi.org/10.1080/17487870.2021.1942874>

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This is the final peer-reviewed accepted manuscript of:

Lucia Quaglia, Aneta Spendzharova (2022): Disentangling derivatives: international policy reforms concerning central counterparties, Journal of Economic Policy Reform, 25 (3): 305-321

The final published version is available online at:

<https://doi.org/10.1080/17487870.2021.1942874>

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**Disentangling Derivatives:
International Policy Reforms Concerning Central Counterparties**

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Abstract

After the financial crisis, international policy reforms were adopted on various aspects of derivatives markets, highlighting a major policy challenge: the need for precise and consistent rules internationally. We examine the making of international rules concerning the resilience, recovery and resolution of central counterparties (CCPs), which form a critical global financial infrastructure. We argue that regulators played an important role in setting relatively precise and consistent international standards on CCPs over time. Facing common challenges, such as market fragmentation and interlinkages between issues, fostered a problem-solving approach in transgovernmental networks. We also identify the policy coordination tools used by regulators.

1. Introduction

After the international financial crisis, a wave of international regulatory reforms focused on derivatives (Helleiner 2014, Helleiner *et al.* 2018, Knaack 2015, 2018, Newman and Posner 2018, Pagliari 2013), especially over the counter derivatives (OTCDs), which financier Warren Buffett dubbed as ‘financial weapons of mass destruction’.¹ Given the massive regulatory effort at stake and the disparate aspects of derivatives markets that needed to be regulated, almost all the main international standard-setters in finance were involved in the post-crisis reforms, such as the Financial Stability Board (FSB), the International Organization of Securities Commissions (IOSCO), the Committee on Payment and Settlement Systems (CPSS), subsequently renamed as the Committee on Payments and Market Infrastructures (CPMI), and the Basel Committee on Banking Supervision (BCBS).² Moreover, several standards concerning the OTCDs were jointly issued by two (or more) international standard-setters, for example, the CPSS-IOSCO *Principles for Financial Market Infrastructures* (2012) and the BCBS-IOSCO *Margins for Uncleared Derivatives* (2013). These regulatory efforts required considerable ‘joined-up thinking’. As emphasised by the Chair of the European Securities and Markets Authority (ESMA), Steven Maijoor (2013), the changes in OTCD markets ‘are not about tinkering around the edges, but rather about a momentous regulatory change. Coordinating a massive regulatory change is obviously more difficult than coordinating a marginal adjustment to an existing regulatory framework’.

Post-crisis international standard-setting concerning derivatives markets posed a considerable policy challenge for three main reasons. First, whereas derivatives were not subject to much public regulation pre-crisis (Helleiner and Pagliari 2011, Pagliari 2013, Lockwood 2018), a vast array of international standards on derivatives were issued after the crisis. Second, whereas pre-crisis international financial regulation mostly occurred in a silos-like structure - meaning that one standard-

setting body was responsible for issuing regulation on a given matter - a multitude of bodies was involved in regulating derivatives post-crisis. Third, pre-crisis international efforts failed to overcome sectoral fragmentation in finance (see Newman and Posner 2018, Chapter 3), as lamented by the International Monetary Fund and the World Bank, facilitating regulatory arbitrage by the financial industry. By contrast, sectoral fragmentation was avoided in regulating international derivatives markets after the crisis. It was puzzling that, despite all the challenges mentioned above, relatively precise and consistent standards on derivatives were adopted over time.

This paper explains why and how this happened by focusing on three sets of standards that were crucial for the systemic stability of derivatives markets and were included in the priority areas of post-crisis reforms closely monitored by the FSB. These international standards concerned the resilience, recovery and resolution (the 3 'R's) of central counterparties (CCPs), through which derivatives are cleared. Clearing is the process by which CCPs, also called 'clearinghouses', facilitate a transaction between the buyer and the seller of a financial instrument. Clearing is important for financial stability, given the large volume of trades in derivatives that are executed daily (see Genito 2019). In fact, Paul Tucker (2011), Deputy Governor of the Bank of England, defined the CCPs as 'system risk managers' as well as 'super-systemic', especially those clearing globally-traded instruments because they concentrate risk.

We selected the rules on the resilience, recovery and resolution of CCPs for this study because they were a hard case for international regulatory precision and consistency for several reasons. First, there were no pre-set or focal standard-setters dealing with CCPs at the international level. Only the CPSS-IOSCO had issued a limited set of general recommendations in 2004. Second, at the national level, multiple regulatory authorities dealt with CCPs supervision, resolution and oversight, which led to a fragmented domestic regulatory process. Third, there were no pre-existing national policy templates

on CCPs recovery and resolution that could be adopted at the international level. Thus, policy-makers had to start from scratch, sometimes borrowing from existing private sector practices (Lockwood 2018).

We first consider a state-centric explanation of international standard-setting, which is well-established in the literature. We then bring in and explain the value added of a complementary account focusing on transgovernmental networks. By doing so, we contribute to two main bodies of academic literature. First, this paper speaks to the literature on post-crisis regulatory reforms in finance. Whereas several scholarly works on derivatives regulation have discussed regulatory changes in various jurisdictions (e.g. several chapters in Helleiner *et al.* 2018) as well as bilateral regulatory relations between the main jurisdictions (Knaack 2015, 2018, Newman and Posner 2018, Pagliari 2013, Posner 2018), very few works have examined the international coordination of derivatives regulation. To shed new light on these dynamics, we investigate why and how different international standard-setting bodies coordinate their activities and with what results. This topic has become increasingly important due to the augmented complexity of finance and the large number of cross-sectoral issues to tackle, which have resulted in an ‘over-crowded’ regulatory space.

Second, this paper adds to the literature on transgovernmental networks, whose importance is often underplayed by the scholarly works that consider international standard-setting bodies as fora where the interests and the bargaining power of states are paramount (Drezner 2007, Helleiner 2014, Singer 2004). By contrast, the literature on the ‘new interdependence’ (Farrell and Newman 2014, Newman and Posner 2016, 2018) and some legal scholars (e.g. Brummer 2015, Verdier 2009) have paid more attention to transgovernmental networks of domestic regulators and the soft law they issue. Drawing on these works, we argue that regulators played an important role in setting relatively precise and consistent international standards on CCPs over time. Facing common challenges, such as market

fragmentation and interlinkages between issues, fostered a problem-solving approach in transgovernmental networks. The problem-solving approach was further facilitated by the expert agreement among regulators on the problems to be addressed and the possible solutions. Furthermore, the policy contribution of the paper is to identify the formal and informal coordination tools used by regulators, which could apply to other issue areas of complex regulation.

The paper is organised as follows. Section 2 reviews the literature on international standard-setting in finance and presents the theoretical framework and research design. Section 3 shows how the post-crisis international standards concerning CCPs became more precise and consistent over time. Sections 4 and 5 assess, respectively, the main explanations teased out in Section 2 against the empirical record, which was gathered through a systematic survey of press coverage, publicly available policy documents, responses to consultations, and confidential semi-structured elite interviews. Section 6 summarises the main findings.

2. Theoretical framework and research design

The dependent variable, that is to say, the empirical outcome to be explained with reference to the post-crisis international regulation of CCPs is the precision and consistency of the international standards adopted over time. Precision refers to the granularity of the rules. Consistency means that the rules issued by various bodies do not contradict each other and are, instead, compatible (Quaglia and Spetzharova 2019), working together towards the same purpose. One can observe consistency when, for example, the regulatory objectives and instruments set by one set of rules underpin (or, at least, do not contradict) other rules, or when concepts defined and measured by one set of rules are used in the same way by other rules. The regulatory consistency of the 3Rs of CCPs was of utmost importance because standards on the resilience of CCPs were designed to avoid the need to resort to

recovery and resolution, and most of the tools used in the recovery of CCPs were also used in the resolution, as elaborated below.

At the domestic level, when there is rule overlap or jurisdictional conflicts among different actors, the issue is often ‘passed on’ to a higher level in the government’s organisational hierarchy, eventually to be resolved by the relevant minister, or in a collective cabinet discussion. However, such vertical transfer of issues upwards to a higher organisational level to resolve jurisdictional overlaps and avoid regulatory fragmentation is not feasible at the international level in the absence of an overarching government. The literature on international standard-setting has not addressed this issue so far, but it provides useful insights for the analysis.

In order to explain the empirical outcome of interest, we first consider a state-centric explanation which would focus on the preferences and powers of the main jurisdictions in regulating global finance (e.g. Drezner 2007, Helleiner 2014, Singer 2007). In the aftermath of the international financial crisis, Helleiner and Pagliari (2011) highlights the trend towards ‘cooperative decentralization’, meaning the issuing of rather general international standards, while ‘carving out’ considerable domestic ‘regulatory autonomy’, especially for the main jurisdictions. With specific reference to derivatives, Gravelle and Pagliari (2018) examine the tug of war between the US and the EU in regulating this global market with ‘national toolkits’, whereby the main jurisdictions projected their regulatory authority extraterritorially in order to deal with cross-border entities and transactions. Similarly, Knaack (2018) points out the transatlantic competitive struggles to attract this lucrative business, as well as the weakness of transnational fora for the regulation of these markets, as argued also by Posner (2018).

While these accounts explain well the rather ‘thin’ initial international standards on derivatives, including CCPs, developed shortly after the financial crisis and the acrimonious transatlantic disputes, they do not account for the subsequent development of international standards, particularly, their increasing precision and consistency over time. In order to account for this outcome, we bring in a second, complementary, explanation, which focuses on transgovernmental networks of domestic regulators gathered in international standard-setting bodies that issue soft law (Bach and Newman 2014, Brummer 2015, Newman and Posner 2018, Verdier 2009).

Financial regulators have similar educational training, professional background, and share the same body of technical knowledge (Tsingou 2015; Seabrooke and Henriksen 2017). They also have extensive experience in international coordination and they are somewhat insulated from politicians and the financial industry (Singer 2007), albeit less so in the aftermath of the crisis (Helleiner and Pagliari 2011). On the one hand, domestic regulators are mindful of the implications of international standards for the national financial system they oversee. Consequently, the process of setting international standards does not simply revolve around establishing consensus on the technical details; it also involves striking a balance between the domestic political economy concerns of various jurisdictions (Quaglia and Spendzharova 2017). On the other hand, financial regulators have an incentive to promote the precision and consistency of various sets of international rules because of their mandate to protect financial stability, which would be jeopardised by incompatible rules.

The literature points out that transgovernmental networks are more effective in international coordination if regulators have similar epistemic views and there is consensual expert knowledge in a given area (Brummer 2015; Seabrooke and Henriksen 2017; Verdier 2009). In other words, domestic regulators are more inclined to adopt a problem-solving approach and seek international coordination if they face common challenges, agree on the problem to address (problem definition),

and how to tackle it (problem solution). Furthermore, regulatory interlinkages across international standards, meaning that one set of rules has direct implications for another set of rules, can also foster a problem-solving approach. The specific policy contribution of this paper is to identify and examine systematically a variety of formal and informal tools that regulators can deploy in order to promote the coordination of their activities in international standard-setting bodies (see Table 1). We explain in-depth how regulators used these tools in practice in Section 5.

Table 1: Informal and formal coordination tools

| Informal | Formal |
|--|---|
| Adopting good practices from another organization | Cross-referencing of standards |
| Regulatory dialogues/ exchange of information with other standard-setting bodies, i.e. through phone calls, meetings | Joint working groups, joint studies, joint standard-setting |
| | Memoranda of understanding (MoUs) |

3. Post-crisis international standard-setting on derivatives and CCPs: increasing precision and consistency

Before the crisis, derivatives markets mostly relied on self-regulation (Helleiner 2014, Helleiner and Pagliari 2011), mainly by the International Swaps and Derivatives Association (ISDA) (Lockwood 2018). The Group of Thirty also issued some recommendations on derivatives (Tsingou 2015). Hence, there was no specific international standard-setting body designated to regulate derivatives

(Posner 2018). CCPs were an ‘arcane and niche part of the financial market’ and a bit a ‘no man’s land’ (interview). In 2004, two international standard-setting bodies, the CPSS and the IOSCO, issued joint *Recommendations on CCPs*, which were rather general rules that mostly relied on voluntary compliance.

Post-crisis, international standard-setting expanded its scope to several new aspects of derivatives markets with the aim of: i) increasing the trading of standardised OTCs on exchanges or trading platforms; ii) expanding OTCs clearing through CCPs, whenever possible, for example, via mandatory clearing of certain types of OTCs, or by increasing the margins and capital requirements for OTCs not cleared through CCPs; iii) ensuring that all OTCs transactions were reported to trade repositories; and iv) tightening up the regulation of financial market infrastructures, including new rules on the resilience, recovery, and resolution of CCPs (also known as clearinghouses), in recognition of the fact that they had the potential to concentrate systemic risk and hence threaten financial stability. These standards are summarised in Figure 1 below, and the composition of the different standard-setting bodies is further explained in Section 6.

[FIGURE 1 ABOUT HERE]

After the crisis, there was a clear need for international rules, more stringent and precise than broad recommendations, to underpin the international clearing system. One option was to re-issue institution-specific standards (e.g. on CCPs, payment and settlement systems), updating the existing pre-crisis regulation. Another option was to consolidate the different standards into one single document. This second option was eventually chosen, which generated ‘self-imposed complexity because it was not easy to issue standards suitable for various types of financial market infrastructures’ (e.g. CCPs, trade repositories, payment and settlement systems) (interview). This

partly explains the limited granularity of the rules issued, at least initially. Furthermore, regulators also sought to create rules that were broad enough to be applied in a variety of domestic contexts (interview). In 2012, the CPSS-IOSCO issued the *Principles for Financial Market Infrastructures*, a bulky document of approximately 200 pages, which included the pre-existing rules on payments and settlement systems, as well as new recommendations for trade repositories and CCPs.

In 2014, the CPSS and the IOSCO, after public consultation, issued a *Report on Recovery for Financial Market Infrastructures*, including CCPs, to provide guidance on the recovery planning process as well as a menu of tools for recovery. In 2017, the CPMI-IOSCO issued *Resilience and Recovery of Central Counterparties (CCPs): Further Guidance on the Principles for Financial Market Infrastructures* in order to provide increased clarity and granularity concerning the implementation of the *Principles* with specific reference to CCPs. As explained in the following sections, this was partly in response to the increasing market fragmentation and cross-border disputes that resulted from domestic rules that diverged in some respects, notably those not sufficiently specified in or not tackled by the *Principles*.

In parallel to the CPSS-IOSCO's discussion on the recovery of CCPs, the FSB carried out work on their resolution. In 2014, after public consultation, the FSB reissued the *Key Attributes of Effective Resolution Regimes for Financial Institutions*, incorporating guidance on their application to non-bank financial institutions, including CCPs. In 2017, the FSB issued *Guidance on Resolution and Resolution Planning for Central Counterparties (CCPs)*, spelling out the implementation of the *Key Attributes* with specific reference to CCPs. In 2018, the CPMI-IOSCO (2018) developed a harmonised framework for supervisory stress testing of CCPs. In 2014, the BCBS, in collaboration with the CPSS and the IOSCO, issued *Capital Requirements for Bank Exposures to CCPs*, given that the resilience of CCPs depended on that of its clearing members (dealer banks), and vice versa. Later

on, two joint studies of the BCBS-CPMI- IOSCO-FSB (2017, 2018) mapped the interlinkages between CCPs and clearing members.

Overall, post-crisis international standards on the 3 Rs of CCPs became considerably more precise and consistent over time. The CPSS-IOSCO (2004) *Recommendations* were rather ‘thin’: they contained minimal provisions on the resilience of CCPs – which were required to maintain financial resources sufficient to cover the default of the largest clearing member – whereas recovery and resolution were not discussed at all. By contrast, the CPSS-IOSCO *Principles* (2012) were more detailed. They required CCPs to maintain financial resources sufficient to cover the default of the two largest clearing members. The *Principles* (2012) were also more prescriptive than the *Recommendations* (2004) about the methodology to calculate risk-based margins for CCPs.³ New rules were introduced concerning the segregation and portability of the positions of a participant’s customers, whereas there were no specific rules on these matters in the *Recommendations*. As for liquidity risk, CCPs were required to maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, whereas the *Recommendations* had no provisions on liquidity.

Even though the *Principles* (2012) were more detailed than the *Recommendations* (2004), there was a need for further specification. The rules on the resilience of CCPs – the *Principles* issued by the CPSS-IOSCO in 2012 – initially had limited granularity, for instance, on margin models and stress-testing, and did not discuss supervisory and cross-border matters, which partly explains the regulatory disputes that emerged between the US and the EU (Knaack 2015, Newman and Posner 2018, Pagliari 2012, Posner 2018). Subsequently, the CPMI-IOSCO issued *Further Guidance on the Principles* in 2017, providing more granularity concerning CCPs’ governance, coverage and margin, and a framework for supervisory stress-testing of CCPs was agreed by the CPMI-IOSCO in 2018. Moreover, controversial issues that had initially been side-stepped, such as recovery, resolution, and

the treatment of CCP equity in resolution were dealt with by subsequent international standards. Thus, the CPSS-IOSCO (2014, 2017) discussed the recovery of CCPs and the FSB (2014, 2017) the resolution of CCPs. Then, the FSB (2018) consulted on the treatment of CCPs' equity in resolution in preparation for issuing international rules. Finally, the IOSCO (2019) and the FSB (2019) issued two coordinated reports highlighting remaining issues to be tackled in market fragmentation and cross-border matters.

As for consistency, the standards on the 3 Rs, and in particular, those concerning recovery and resolution, were consistent with one another and, as we show in Section 5, transgovernmental networks of regulators were crucial in crafting consistent rules across issues and over time. The standards issued by the CPSS-IOSCO on recovery and by the FSB on resolution had the same objectives: to preserve the critical functions of CCPs, while maintaining financial stability and avoiding bailout through taxpayer money. They also partly prescribed the use of the same instruments in that several instruments used in recovery were also to be used in resolution (e.g. margins haircutting, cash calls, tearing up of contracts). In sum, this section has shown that the post-crisis standard on CCPs became relatively more precise and consistent as time went by. Having clarified the outcome of interest, we examine next the analytical leverage of the explanations outlined in Section 2, pointing out the value added of the transgovernmental networks explanation.

4. State-centric explanation

After the crisis, the 'great (financial) powers' (Drezner 2007), namely, the US and the EU, where the bulk of derivatives trading and clearing took place, wanted to tighten up domestic regulation on derivatives, including CCPs. However, the adoption of more stringent (and hence, costly) rules unilaterally would have put the national financial industry at a competitive disadvantage.

Furthermore, the main jurisdictions worried about the financial stability risks posed by loosely regulated CCPs in other jurisdictions, which, after the crisis, were eager to set up CCPs clearing derivatives on their territory (Helleiner 2014; Knaack 2015; Gravelle and Pagliari 2018). Clearing is a lucrative business and more lightly regulated CCPs are more competitive and well-positioned to attract business. This dilemma between financial stability and financial competitiveness (Singer 2007) explains why the main jurisdictions were supportive of international standards on CCPs (James and Quaglia 2020).

For instance, the Chairman of the Federal Reserve, Ben Bernanke (2011), pointed out that ‘increased reliance on clearinghouses to address problems in other parts of the system increases the need to ensure the safety of clearinghouses themselves. As Mark Twain’s character Pudd’nhead Wilson once opined, if you put all your eggs in one basket, you better watch that basket’. Concerning CCPs’ recovery and resolution, a member of the Executive Board of the European Central Bank (ECB), Benoît Cœuré (2018), remarked that ‘the disorderly failure of a major CCP would be disastrous. Many CCPs are globally systemic, responsible for clearing global markets and with participants from across the world’. Thus, rules to improve the resilience, recovery and resolution of CCPs were necessary after the crisis (see also Tucker 2011; Maijoor 2013).

Domestic rules on the resilience of CCPs were adopted in the US and the EU after the issuing of the CPSS-IOSCO (2012) *Principles* and were indeed informed by these standards. However, these standards had limited granularity on specific matters and did not tackle certain issues. Hence, domestic regulation subsequently adopted in the US and the EU differed in some respects (notably, margin models) and both jurisdictions sought to impose extraterritorial reach (Posner 2018). This resulted in transatlantic regulatory disputes concerning CCPs as well as other aspects of derivatives markets (Knaack 2015; Gravelle and Pagliari 2018). The transatlantic tug of war generated cross-

border problems not only for CCPs and clearing members in the US and the EU but also for those in third countries. The ensuing market fragmentation along national lines was particularly problematic for a global market such as the derivatives one (Knaack 2018). In order to deal with these problems, international standards on resilience needed to be beefed up and complemented by rules on recovery and resolution for CCPs.

However, the US and the EU encountered several obstacles in coordinating the activities of international standard setters. In addition to the transatlantic disagreements mentioned above, there were heterogeneous views within the jurisdictions because a multiplicity of regulatory authorities was involved, with different compositions, competences and regulatory outlooks. Indeed, the fragmented regulatory competences at the domestic level, coupled with poor domestic coordination, undermined the ability of the main financial jurisdictions to promote coordination amongst different standard-setters. This is consistent with Lavelle's (2019, p.1) finding that the domestic fragmented regulatory system often prevents the US from 'acting as a unitary, lead actor' in international standard-setting. In the US, the Securities and Exchange Commission (SEC) supervises CCPs clearing non-OTCDs, the Commodity Futures Trading Commission (CFTC) supervises CCPs clearing OTCDs, the Federal Reserve oversees globally systemically important CCPs, and resolution is the responsibility of the Federal Deposit and Insurance Corporation (FDIC).

In the EU, CCPs' supervision and resolution are mostly the competences of the national authorities, and new EU legislation failed to substantially increase the role of EU level authorities, which are the ESMA for CCPs supervision and resolution, and the ECB for CCPs oversight in the euro area. EU member states allocate competences on CCPs in a variety of ways and have different preferences in regulating and supervising CCPs. The main member states are also involved in the international standard-setting process, together with the EU authorities. Under these conditions, as previous

research has pointed out, the EU is less influential internationally if it lacks a domestic regulatory template to upload (Quaglia 2014) and if different national and EU authorities are present in the same international venues (Mügge 2011).

Overall, a variety of US and EU authorities, with different compositions, competences and regulatory outlooks were involved in the international standard-setting process on CCPs. On the US side, the CPSS-IOSCO Working Group that prepared the *Principles* included officials from the CFTC, the SEC, the Federal Reserve Board of New York, the Board of Governors of the Federal Reserve. The FDIC was involved in the FSB Working Group on Resolution. On the EU side, the CPSS-IOSCO Working Group was co-chaired by the ECB and included officials from the Commission, ESMA (as observers), and eight member states (UK, France, Germany, Italy, Spain, Netherlands, Belgium and Sweden). As one interviewee put it, sometimes, the only policy location in which domestic regulators from the same jurisdiction talked to each other was in international standard-setting bodies (interview).

The empirical record of the international standard-setting process on CCPs suggests that on important issues concerning the preferences of domestic regulatory agencies were not aligned, which is a limitation of the state-centric explanation. For instance, the Federal Reserve primarily paid attention to matters of concern for central banks, notably the liquidity resources of CCPs and their access to central bank liquidity (interview). The FDIC, which is the resolution authority for CCPs, supported the wiping out of CCPs' capital in resolution, which was, instead, resisted by the CFTC. For the US Treasury, the priority was to rule out taxpayer support. Several interviewees pointed out that the US positions very much depended on which domestic authority took the lead in a given regulatory venue, or on a certain matter (see also Lavelle 2019). The European Commission, the ECB, and the ESMA, the member states also had heterogeneous preferences concerning the supervision, recovery and

resolution of CCPs and were engaged in a bureaucratic power struggle to expand their competence on CCPs at the EU level (James and Quaglia 2020). Considering the internal disagreements and divisions among different regulators in the main jurisdictions, we argue that transgovernmental networks of regulators operating at the international level played an important role in fostering compromise and crafting more consistent and precise international standards over time.

5. Transgovernmental explanation

The transgovernmental account is complementary to the well-established state-centric one in order to explain the precision and consistency of international rules on CCPs over time. Domestic regulators gathered in a variety of international standard-setting bodies were involved in the rule-making on the resilience, recovery and resolution of CCPs. We focus on international standard-setting bodies as the main fora where domestic regulators interacted with each other. The CPSS, renamed as the CPMI in 2014, brings together the central banks of the G20 – central bankers are responsible for the ‘oversight’ of CCPs, which is system-wide, informal, based on ‘moral suasion’. The IOSCO, whose membership includes more than one hundred jurisdictions, brings together securities market supervisors, which supervise individual CCPs in some countries (e.g. in the US and Germany), but not in others (e.g. in the UK), or share this responsibility with the central bank (e.g. in Italy and France). The BCBS, which brings together the central banks and banking supervisors of the G20, set capital requirements for bank exposure to CCPs. The FSB brings together central bankers, financial supervisors, and treasury ministry officials from the G20 countries as well as representatives from all other international standard-setting bodies (CPSS/CPMI, IOSCO, BCBS, IAIS, IASB), the BIS, the World Bank, the IMF, the OECD. At the outset, the division of work amongst the standard-setters was unclear for several reasons. As the issue area had not been subject to international regulation in the past, there was no predefined division of tasks among the different standard-setting bodies involved. Some of

the issues discussed were cross-sectoral, and it was unclear which specific regulatory body should take the lead. The issues ‘cropped up in the regulatory agenda in a non-linear way, and not necessarily in the most logical order’ (interview), which required a problem-solving approach and developing new tools for coordination.

Transgovernmental networks of regulators in standard-setting bodies played a crucial role in overcoming disagreements and finding mutually acceptable international rules, for example, concerning margin models and stress testing for CCPs resilience in order to reduce market fragmentation, which was seen as a problem not only for the main financial jurisdictions but also for other countries hosting CCPs. On CCPs recovery and resolution, a controversial issue dealt with was the use of the CCPs rulebook, as favoured by the US and the UK, which tended to rule out resolution, focusing only on recovery. In contrast, continental member states wanted to base resolution on legislative texts, not contractual relations, giving more powers to the resolution authorities (interview). International standard-setters also worked to promote the use of regulatory and supervisory deference in order to deal with cross-border issues and limit the extraterritoriality of domestic regulation.

Furthermore, the international fora examined in this paper were instrumental in reconciling the priorities of various sectoral networks of regulators, which had different competences and regulatory outlooks. In the discussion concerning the tools for the recovery and resolution of CCPs, the different views of central bankers and securities markets regulators on specific matters had to be brought together. For example, the ‘suspension of clearing in case of CCPs resolution was fine for financial stability – that was the concern of central bankers, which also paid attention to the stability of clearing members, mostly dealer banks. But, for securities market regulators – which focused on markets and

products – the suspension of clearing was difficult to accept because certain OTCs were subject to mandatory clearing via CCPs’ (interview).

We argue below that domestic regulators are more inclined to adopt a problem-solving approach and seek international coordination if they face common challenges, such as market fragmentation, agree on the problem to address (problem definition) and how to tackle it (problem solution). Furthermore, regulatory interlinkages across international standards, meaning that one set of rules has direct implications for another set of rules, can also foster a problem-solving approach.

Starting with the problem to address, soon after the crisis, FSB (2010) policy papers reveal that there was overall expert agreement among financial regulators on the need to promote the clearing of derivatives via CCPs, as well as on the need to regulate CCPs more stringently, given their systemic importance. Speeches and policy papers released by US, UK and EU regulators suggest that there was expert consensus not only on what CCPs were, how they worked, and the risks they posed, but also, to a large extent, on how to deal with these risk, that is to say, how to regulate CCPs. Regulators pointed out the need for new international rules on resilience (e.g. the use of initial and variation margins, the use of stress-testing) and new rules on recovery and resolution (e.g. the use of the default fund and the default waterfall, the principle no creditor worse off than in liquidation) (for further details see Quaglia 2020).

This expert consensus on CCPs regulation contrasts, for example, with the post-crisis regulation of shadow banking, where regulators could not agree either on the definition and measurement of shadow banking or on the risks it entailed and how to regulate it (Ban and Gabor 2016; Nesvetailova 2017). Whereas regulators did not agree on everything concerning the oversight of CCPs, their disagreements were mostly limited to specific points, such as margins models, methodologies for

stress testing, and the specific sequence in the default waterfall. Some of these issues, together with extraterritoriality, were at the centre of the transatlantic regulatory disputes. US and EU regulators sought to sort out these issues bilaterally, but given the fragmentation of the global derivatives market, it became clear that the intervention of international standard-setting bodies was needed.

Furthermore, there were significant regulatory interlinkages across international standards on CCPs, which could jeopardise their effectiveness, ultimately, undermine financial stability. In fact, the CPSS-IOSCO *Principles* (2012) specified the rules designed to strengthen the resilience of financial market infrastructures, including CCPs, so as to prevent them from getting into trouble, which would then trigger recovery, regulated by the CPSS/CPMI-IOSCO (2014, 2017) and resolution, regulated by the FSB (2014, 2017). Consequently, the stricter the prudential rules for CCPs (for example, the amount of financial resources to deal with credit or liquidity risk), the less likely it was that CCPs would need to undergo recovery and resolution, but the less profitable CCPs became and the more expensive their use by dealer banks and end-users. The CPSS-IOSCO rules on recovery had implications for the FSB rules on the resolution of financial market infrastructures, including CCPs and vice versa, given the fact that several tools used for recovery were also used for resolution. Moreover, there were resolution only tools, some of which were also used for banks resolution and, indeed, were ‘borrowed from the banking toolkit’ (interview). Finally, capital requirements for bank exposure to CCPs, issued by the BCBS (2014), in collaboration with the CPSS-IOSCO, were designed to make the system more resilient to failures of banks and CCPs.

Financial regulators were well-aware of these regulatory interlinkages. As one regulator put it, ‘Of course we worried about how various rules fitted together, it would be us [the regulators] on the hook, having to deal with any problem further down the line’ (interview). At the national level, after the crisis, the mandate of several regulators was revised to explicitly include financial stability

responsibilities as well as obligations to cooperate in international fora. For example, Section 752 of the Dodd-Frank Act envisaged that ‘In order to promote effective and consistent global regulation of swaps and security-based swaps, the CFTC, the SEC and the prudential [banking] regulators ... shall consult and coordinate with foreign regulatory authorities on the establishment of consistent international standards with respect to the regulation of swaps’. At the international level, the statute of some standard-setting bodies, most notably, the BCBS, was revised to include amongst the responsibilities of its members the promotion of ‘the interests of global financial stability and not solely national interests, while participating in BCBS work and decision-making’ (Article 5, Charter of the BCBS).

Over time, the charters of several international standard-setting bodies in finance were also revised to explicitly include coordination with other standard-setters. For example, the BCBS was mandated to ‘cooperate with other international financial standard setters and public sector bodies to achieve enhanced coordination of policy development and implementation’. The Charter of the CPSS/CPMI contained similar provisions. Several interviewees pointed out that they did not participate in international standard-setting bodies as ‘national representatives, advancing the national interest, but rather as experts with a problem-solving approach’ (interview). Another regulator sitting in a joint working group argued that, if anything, he felt he represented the international standard-setting body he was a member of (interview).

We argue that the main rationale for regulators operating in international standard-setting bodies to adopt a problem-solving approach and promote the precision and consistency of the rules derived from their responsibility to safeguard financial stability, which is jeopardised by unclear and inconsistent standards on the 3 Rs of CCPs and the ensuing market fragmentation. Still, the empirical account suggests that such coordination was not plain sailing: it was initially problematic and

proceeded by trial and error. At the outset, it was understood that ‘splitting resilience from recovery was not suitable for CCPs, unlike what it had been done for banks, where resilience was discussed by the BCBS and resolution by the FSB’ (interview). Hence, the recovery of CCPs was to be discussed by the CPSS-IOSCO, which set the rules on resilience. Furthermore, since recovery and resolution for CCPs are a continuum, and most of the tools used for recovery are also used for resolution, whereas that is not the case for banks, it was felt that the CPSS-IOSCO should also discuss resolution (not only recovery). However, subsequently, the discussion on the rules for the resolution of CCPs was taken over by the FSB for several reasons. There was a pressing need for ‘a consistent approach with bank resolution’ (interviews) – an issue previously dealt with by the FSB, which had already issued *Key Attributes for the Resolution of Financial Institutions* in 2011. Moreover, finance ministry officials, which are present in the FSB (but not in the CPSS-IOSCO), sought to be directly involved, given the potential implications for the national level (interviews).

International standard-setting bodies relied on a variety of informal and formal tools in order to coordinate their activities (see Table 1). The main early coordination mechanisms that we find in our case were informal and concerned the use of *regulatory dialogues /exchange of information* and sharing of best practice. The chairs of the FSB, the CPMI, the BCBS, the IOSCO, and their working groups were engaged in information exchange about ongoing policy work in their respective committees from relatively early on. In the aftermath of the 2008 crisis, these dialogues were rather meant as a tool to inform the other relevant standard-setters about the nature of ongoing policy work and, in turn, receive relevant information about related work streams (interviews). Over time, our interviewees reported more frequent informal phone calls, cross-membership in different committees working on related issues – a *best practice* initially adopted by the FSB and subsequently by other international standard-setting bodies – and increasingly intensive coordination among the members of different working groups within the four standard-setting bodies, whereby they exchanged draft

documents before they were made public and participated in relevant meetings taking place at another committee (interviews). Moreover, the decision to often designate the same officials to cover multiple policy files and participate in several working groups facilitated the coordination process.

In order to solve the problem of multiple international standard-setters issuing interlinked, and potentially contradictory, standards over time, we observe that formal coordination tools were used to supplement the informal ones. For example, international standard-setting regarding the 3Rs shows significant use of *cross-referencing*, whereby international standard-setters extensively cross-reference each other's standards to ensure consistency. The CPSS-IOSCO (2014) *Recovery of Financial Market Infrastructures* makes reference to the FSB (2011, 2014) *Key Attributes* and the CPSS-IOSCO (2012) *Principles on Financial Market Infrastructures*. The FSB (2014) *Key Attributes* refer to the CPSS-IOSCO (2012) *Principles* and the CPMI-IOSCO report (2014) on *Recovery*.

Moreover, there were several instances of *joint working groups* and *joint standard-setting*. For example, the CPMI-IOSCO jointly issued international standards on CCPs resilience first, and recovery later. The joint standard-setting was coordinated by an Editorial Team that was co-chaired by the CPSS and the IOSCO, represented, respectively, by the ECB and the SEC. The other members of the committee were central bankers and securities markets regulators, almost in equal numbers. Another important instance of formal coordination was a Joint Study Group of the BCBS, CPSS, IOSCO, and FSB to analyse financial interlinkages – which also have implications for regulatory interlinkages - between CCPs and clearing members (mostly, large banks). Pooling together different strands of expertise from the various international standard-setting bodies in order to achieve better international coordination, the study group was composed of about 15 members covering a range of policy areas. Its *joint studies* (2017 and 2018) were used as input for designing supervisory stress tests (CPMI-IOSCO 2018) and informed further work on CCPs resilience, recovery and resolution

(i.e. FSB 2018). Finally, according to our interviewees, the strongest formal coordination tool was the *Joint Workplan on CCPs* (2015) agreed by the FSB, the BCBS, the CPMI, and the IOSCO. It served as a *quasi-MoU*, setting out the concrete responsibilities of each standard-setting body, the division of labour among them, and specifying further work to be carried out.

6. Conclusion

Post-crisis international standard-setting concerning various aspects of derivatives markets presented a considerable policy challenge due to the fragmented responsibilities for derivatives among a multitude of international and domestic regulatory bodies. We shed light on international standard-setting on CCPs, explaining how and why these standards became more precise and consistent over time. While substantial progress has been made in the international reforms concerning CCPs in the decade after the financial crisis, areas of disagreement remain to be tackled. Supervision is one such controversial issue that was not dealt with by international standard-setters. This is an important area for further research, which is now at the centre of transatlantic disputes on CCPs, also in the context of Brexit.

We argued that regulators, which form transgovernmental networks, are well-positioned to iron out disagreements across and within jurisdictions in order to craft more precise and consistent international standards. These networks are also well equipped to understand how different sets of rules affect each other and deploy a variety of tools to coordinate the work of the various international standard-setting bodies. Confronted with common challenges, such as market fragmentation and regulatory interlinkages, regulators pay considerable attention to the precision and consistency of international standards that are important to safeguard financial stability – this is ultimately their main rationale. Moreover, the policy contribution of the paper is to identify the tools used by regulators to

promote coordination amongst the different international standard-setting bodies in which they operate. These could be used in other policy areas of complex regulation.

Policy highlights

- Post-crisis international standards on CCPs, which form a critical financial infrastructure, became more precise and consistent over time.
- Confronted with common challenges, such as market fragmentation and issue interlinkages, domestic financial regulators working in transgovernmental networks adopted a problem-solving approach.
- Regulators used a variety of formal (e.g. joint working groups) and informal (e.g. information exchange) tools to craft more precise and consistent rules over time.

List of interviews (for the review process only)⁴

Interview A, (US private actor), 18-10-2018

Interview B, (IOSCO official), 9-11-2018

Interview C, (ECB official & former CPSS official), 20-11-2018

Interviews D-E, (FSB officials), 23-11-2018

Interview F, (DG FISMA official), 27-11-2018

Interview G, (DG FISMA and CPSS member), 3-12-2018

Interview H, (private actor Brussels), 20-12-2018

Interviews I, J (CPSS member and FSB member), 24-01-2019

Interviews K (CPSS member), 28-1-2019

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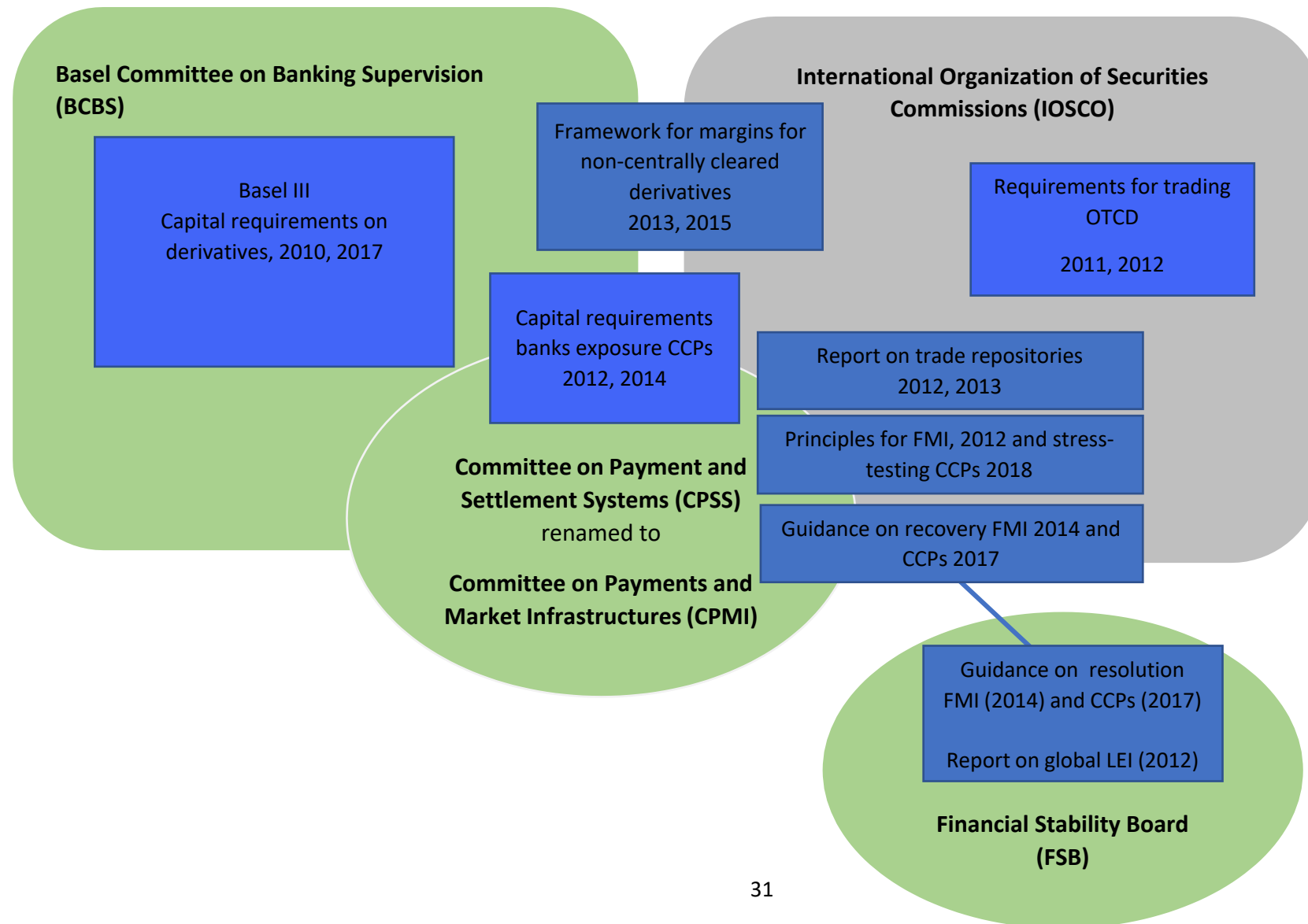
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Figure 1: International standard setting on derivatives post-crisis



Endnotes:

¹ A derivative is a contract between two or more parties, the value of which is derived from an underlying asset, such as bonds, currencies, interest rates, or commodities. Derivative contracts can be standardised and traded over an exchange, or they can be traded directly between two parties, these are called over-the-counter derivatives (OTCDs). In the decade prior to the crisis, there was a massive growth in the use of OTCD, such as interest-rate and credit default swaps.

² Private standard setters, such as the International Swaps and Derivatives Association (ISDA) were also involved, but this paper focuses on public standard setters.

³ For example, the *Principles* established that ‘initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure’ (2012: 43).

⁴ The interviews have been given anonymised codes and refer to the date when the interview was conducted. Additional information is only available to the authors to respect the anonymity requests of the interviewees.