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**Regime complexity and managing financial data streams:
the orchestration of trade reporting for derivatives**

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Abstract

International regime complexity has become a prominent feature of the global economy and world politics. The international governance of derivatives markets is a notable case of this phenomenon in finance because a variety of post-crisis rules have been issued by a multitude of international standard-setting bodies. By combining the regime complexity and orchestration frameworks, we explain the precision and scope of international standards for derivatives trade reporting. We show how a collective orchestrator (the Group of Twenty) and a hub intermediary (the Financial Stability Board) managed regime complexity through the orchestration of the available intermediaries. We also seek to refine the orchestration framework by explaining how the mechanism of *issue de-linkage* can be used to manage the partly diverging goals among states within the collective orchestrator. Our findings are relevant for the global regulation and governance of other policy areas characterised by a multiplicity of actors and interlinked issues, such as trade, energy, and environmental policy.

1. Introduction

International regime complexity has become a prominent phenomenon in world politics and the global economy (Abbott and Snidal 2012; Alter and Meunier 2009; Alter and Raustiala 2018; Johnson and Urpelainen 2012; Orsini, Morin and Young 2013; Pratt 2018). Scholars have identified regime complexes in a variety of policy areas, ranging from climate change (Keohane and Victor 2011; Widerberg and Pattberg 2017), intellectual property rights (Urpelainen and van de Graaf 2015), trade (Alter and Meunier 2006) and the Troika in dealing with the sovereign debt crisis in the euro area (Henning 2017). However, international finance has mostly been overlooked by the literature on regime complexity so far (with the exceptions of Heldt and Schmidtke 2019; Breen *et al.* 2020; Quaglia 2020). Yet, regime complexity increased considerably in finance after the 2008 crisis, particularly in areas, such as derivatives markets, which were not subject to public regulation previously.

The international financial crisis brought into the spotlight the importance of regulating derivatives, which played a significant role in fuelling and amplifying the crisis, highlighting the weaknesses of the pre-crisis self-regulation model of these global markets. To define several central notions in our analysis, a derivative is a contract between two or more parties, the value of which is derived from an underlying asset, such as securities, bonds, or commodities. Over the counter derivatives (OTC) are derivatives that are traded bilaterally rather than on stock exchanges. Trade repositories are entities that maintain a centralised electronic record (database) of OTC derivatives transactions and provide them to regulators (for an overview, see Helleiner, Pagliari and Spagna 2018; Gravelle and Pagliari 2018; Knaack 2015, 2018; Newman and Posner 2018; Pagliari 2013a; Posner 2018; Quaglia 2020). Trade reporting is important because it facilitates the creation of more transparent

global derivatives markets and enables regulators to monitor those markets, conducting global risk assessments to mitigate systemic risk and prevent future financial crises (CPSS-IOSCO 2012b).

We focus on the case of reporting derivatives trades to repositories, which highlights two important challenges for managing international regime complexity concerning financial data streams. First, there was no international system to keep track of derivatives transactions before the crisis, even though these financial instruments are traded widely cross-border and constitute one of the largest international financial markets. For instance, the notional value of the OTC derivatives market at the end of 2019 was \$559 trillion (BIS 2019). Second, in some areas of finance, such as banking, there is an international ‘go to’ standard-setting body, such as the Basel Committee on Banking Supervision, which can take the lead in fostering international cooperation, creating new international standards, or updating the existing ones. By contrast, in the case of derivatives, there was no single international body responsible for the regulation of this sector, that is to say, an equivalent to the Basel Committee.

Theoretically, to understand better how global standard-setting unfolds in international regime complexes, we bring together insights from the International Relations literature on issue linkages (in our case to shed light on *issue de-linkages*) and the interplay between orchestrators, intermediaries, and targets from the Orchestration literature. We seek to develop further the Orchestration framework by selecting a challenging regulatory case for international standards to emerge, as it involved a collective orchestrator, multiple intermediaries, and multiple targets. Our analysis shows how a *hub intermediary* can align the work of a multitude of organisations in the regime complex and manage the partly diverging goals of states in the collective orchestrator through *issue de-linkage*. These regulatory challenges and our findings are relevant for other policy fields. For example, derivatives trade reporting requires the setting up of a global system for

product identification, which is similar to labelling globally traded products (Cashore and Stone 2014). It also calls for the creation of a common system for data monitoring and exchange, which is similar to the global monitoring of CO₂ or any other cross-border emissions.

After the financial crisis, states were reluctant to delegate more authority to international organisations and sought ‘softer’, and more flexible, governance arrangements to pursue global coordination (Brummer 2015; Helleiner 2014; Posner 2015, 2018; Viola 2014, 2015). Nevertheless, we cannot take it for granted that such soft governance arrangements will be sufficient to ensure global financial stability. The international governance of derivatives markets is a notable case of regime complexity in finance because it is characterised by the presence of multiple international standard-setting bodies (Bach and Newman 2014; Jordana 2017; Verdier 2009) issuing soft law (Brummer 2015; Newman and Posner 2018) which aim to regulate interlinked derivatives issues. Indeed, almost all of the main international standard-setters in finance were involved in the regulatory process, together with general-purpose standard-setting bodies, such as the International Standardisation Organisation (ISO), and newly set up bodies, such as the Global Legal Entity Identifier Foundation (GLEI). Moreover, as we explain below, several relevant standards were issued jointly by two (or more) international standard-setters.

The overarching puzzle in this article is to understand how regime complexity can be managed in the absence of a ‘go to’ international body that can take the lead in regulating derivatives, unlike for instance, in the case of banking. Whereas, eventually, a new international regime for trade reporting was successfully put in place less than a decade after the crisis, there was uneven progress in the precision and scope of the three main components of the international standards for trade reporting, namely: (1) the harmonisation of data formats; (2) the issuing of global identifiers; and (3) data access and cross-border data sharing. The research question in our article is to explain this varied

empirical pattern, which ranges from the successful setting up of a system of global identifiers to almost no agreement on data sharing, with data formatting in between. This variation is puzzling because finding agreement on the issuing of global identifiers was more challenging organisationally, as it involved a larger number of actors (intermediaries and targets) than in data sharing. The observed variation is also important because, initially, goal divergence among states posed problems on all three issues, which impeded the speedy creation of a functioning global trade reporting regime and hampered the efforts of regulators to monitor the global derivatives markets. However, as our analysis shows, the initial goal divergence among states was mitigated successfully in two components of the trade repositories regime.

This article brings together and contributes to two main bodies of scholarly work, namely: regime complexity (Alter and Meunier 2009; Alter and Raustiala 2018; Keohane and Victor 2011) and orchestration (Abbott *et. al* 2015, 2019, 2020). On the one hand, the regime complexity literature offers important insights into the *substantive regulatory outcomes*, in this case, the international rules that govern the reporting of derivatives trades to repositories. On the other hand, the orchestration literature examines the design and dynamics of complex *international governance architectures* that produce, manage, and monitor the implementation of the rules. Taken together, these two literatures allow us to analyse both the substantive regulatory outcomes in the derivatives trade reporting case and the governance system that produced them. Our analysis is relevant for other policy areas, such as trade, energy, environmental policy, and the oversight of global infrastructures, characterised by a multiplicity of actors and interlinked issues.

First, the literature on regime complexity has emphasized important downsides of this phenomenon, such as inefficient governance outcomes in terms of rule overlap, redundancies, and inconsistencies, as well as undesirable opportunities for forum shopping and regulatory arbitrage. By contrast, we

show that regime complexity in derivatives trade reporting was managed at relatively low set-up costs through the orchestration of available expertise among existing standard-setting bodies, which issued different interconnected rules. Second, we contribute to the literature on orchestration by investigating the case of a collective orchestrator, multiple intermediaries, and multiple orchestration targets, and their implications for the precision and scope of the adopted international standards. We identify the presence of a *hub intermediary* that manages the partly diverging goals of states in the collective orchestrator and aligns the work of a multitude of organisations involved in the regime complex. We also identify a new mechanism, *issue de-linkage*, which is instrumental in managing goal divergence among states in the orchestration process.

The article is structured as follows. Section 2 reviews the relevant literature, presents the analytical framework, drawing on regime complexity and orchestration theory, and discusses the research design and methodology. Section 3 outlines the empirical pattern to be explained – the precision and scope of the adopted international standards. Sections 4, 5, and 6 apply the analytical framework to the derivatives trade reporting case. Section 4 discusses the orchestrator in the international governance of trade reporting and takes stock of the regulatory problems to be addressed, whereas Section 5 examines the intermediaries and the targets. Section 6 explains the orchestration of the international governance of trade reporting. Specifically, it analyses the effect of issue de-linkage by a hub intermediary on the precision and scope of international standards on trade reporting. Section 7 summarises the main findings.

2. Analytical framework and research design

In the international relations literature, the presence of multiple institutions governing a single issue or a set of related issues is referred to as an international regime complex (Alter and Meunier 2009; Keohane and Victor 2011; Johnson and Urpelainen 2012; Orsini, Morin and Young 2013; Pratt 2018). Regime complexes are marked by the existence of several sets of rules – also referred to as ‘elemental regimes’ – that are created and maintained in distinct fora with the participation of different sets of actors (Orsini, Morin and Young 2013). The literature on regime complexity is ambiguous as to whether this phenomenon makes international agreements among states more (or less) likely. Some authors (e.g. Hafner-Burton 2009) argue that forum shopping in a regime complex can make the enforcement of rules (e.g. human rights) that are impossible to implement in one area possible in another area (e.g. trade). By contrast, other authors (e.g. Drezner 2009) argue that although all actors can engage in forum-shopping, only the great powers possess the capabilities necessary to do so effectively. Gehring and Faude (2014) note that states are often eager to avoid the negative effects and dysfunctionalities of regime fragmentation and rule overlap, hence they pursue ‘institutional adaptation’, for instance, through a ‘division of labour among overlapping institutions’ in the regime complex (Gehring and Faude 2014). However, in the case of the international governance of trade reporting, there is no empirical evidence of forum shopping and institutional adaptation was not exclusively state-led; a wider array of actors was involved.

To understand the different precision and scope of international standards on derivatives trade reporting, we need to consider a bigger constellation of actors and a more complex global institutional environment, which is why orchestration theory is particularly insightful. Its value-added is to examine the dynamics in the regime complex, rather than to focus on individual actors in isolation from each other. We apply the O-I-T model (Abbott *et al.* 2015: 3) summarised next in

our empirical analysis. Orchestration is a form of indirect governance, because the orchestrator (O) works through the intermediary (I) to influence the target (T), and it is ‘soft’ because the O often lacks authoritative control over I and T (Abbott *et al.* 2015: 9, see also Abbott *et al.* 2020). Orchestration occurs when an O, ‘enlists and supports’ an I to address a T in ‘pursuit of the governance goals’ of the O.

An O lacks some governance capabilities and, therefore, brings a third party to act as I between itself and the T, rather than trying to govern the T directly. Apart from unitary Os, there can be ‘multiple’ Os, or ‘collective’ Os, which are composed of multiple actors. For instance, several IGOs, such as the Group of Twenty (G20), are collective Os, comprised of different states (Abbott *et al.* 2020: 14). Multiple and collective Os raise the challenge of how to reconcile the diverging goals of states represented in the O on various issues. One way of doing so is through issue linkage, which is well explored by the literature. Another way is through issue de-linkage, as elaborated below. An I has governance capabilities – such as expertise, material resources, and direct access to Ts – which the O does not have. An I collaborates because it shares the O’s governance goals and values its support. An O may enlist as I transgovernmental networks, other international organisations, NGOs, and private actors (for example, business organizations). The Ts of orchestration may be either states or private actors. There can be multiple Is and multiple Ts (Abbott *et al.* 2020: 21), which is particularly important to explain the need for a hub intermediary in our analysis, as elaborated in Section 6.

We seek to contribute to the orchestration framework in two ways. First, we develop the concept of *hub intermediary* (see Figure 1), which we define as an international body actively leading the orchestration process, seeking to align the work of other Is and facilitating the division of labour among Is in the regime complex. The concept of hub intermediary adds to the orchestration theory

by exploring the relationships between multiple Is. A hub intermediary can be identified empirically as a key node in the interaction between the O and other Is. It parcels out the tasks to be accomplished among the relevant Is when the O only issues broad guidance on the general goals. The hub intermediary is different from a lower level O in a chain of indirect governance because the O has no immediate link to the Ts – only Is work directly with Ts (Abbott *et al.* 2015: 5) – and a hub intermediary is also directly linked to Ts. Furthermore, a hub intermediary has institutional proximity to the O and possesses crucial capabilities (such as expertise, established contacts, administrative resources) that the O lacks. In sum, we expect that if there is a collective O and multiple Is, a hub intermediary can contribute to managing regime complexity by aligning the work of the other Is and crafting mutually acceptable solutions.

Second, we identify a new mechanism, *issue de-linkage*. There is long-standing literature that issue linkages among previously separated issues can help to avoid protracted deadlock in international negotiations. The institutional setting affects the negotiation outcomes because it establishes which alternative are considered, how, and when they are decided upon (Davis 2004; Farrell and Newman 2018). For example, in trade negotiations, there are multiple institutional venues where the negotiations may unfold. Depending on the venue, we may see a change both in the policy track for decision-making and in the interest group mobilisation (Davis 2004: 154). In our analysis, we focus on the opposite process of issue separation. We define issue de-linkage as the separation of the more controversial issues from the less controversial ones in the regime complex in order to agree upon international standards acceptable to all parties.

The underlying mechanism is the same as with issue linkages. Importantly for our analysis, the institutional setting has an influence on the division of labour among the different intermediaries

and the coordination of their activities. On the one hand, issue de-linkage helps to solve the partial goal divergences among states in the collective O. On the other hand, it helps to align the work of the multiple Is. We detect issue de-linkage empirically when an actor in the regime complex actively separates the more controversial policy issues from the less controversial ones. It then crafts an international standard acceptable to the negotiating parties regarding the less controversial issues, while leaving the more controversial ones for alternative venues or further rounds of negotiation. In sum, we expect that if there is a collective O and multiple Is, *issue de-linkage* can help to manage regime complexity by identifying areas of possible compromise, especially if there are partly diverging goals among states within the collective O.

The empirical data for our case study of how the *hub intermediary* pursued *issue de-linkage* in trade reporting was collected through a systematic survey of press coverage, publicly available policy documents, statements by key policy-makers, and confidential semi-structured elite interviews. Several interviewees were willing to provide information for background purposes only.

3. The international regime on trade reporting: the empirical pattern to be explained

This section summarises the outcome of interest in the orchestration of the international governance of derivatives trade reporting. The international regime on trade reporting has three key components: (1) harmonisation of data format and aggregation, especially for critical data; (2) issuing of global identifiers for legal entities, transactions, and products; (3) data access and cross-border sharing (Knaack 2018). We examine each of these components and their interlinkages in greater detail below, showing the variation in the precision and scope of the adopted international standards (see Abbott *et al.* 2000). Precision refers to the granularity of the rules. Scope refers to the categories and number of actors (Ts) to whom the rules apply.

To begin with, rules on data harmonisation (component 1), especially for critical data, are necessary to enable the authorities to share data cross-borders, which would be otherwise a futile exercise. The so-called ‘critical data’ relate to counterparties, valuation, collateral, and margins, which need to be harmonised internationally for a meaningful comparison across countries and global data aggregation. Secondly, global identifiers for legal entities, transactions, and products (component 2) are necessary to be able to monitor derivatives trades. The Legal Entity Identifier (LEI) is a standard reference code that provides a universal method of identifying entities that are counterparties in derivatives transactions, or other financial transactions. The Unique Product Identifier (UPI) conveys information about the financial product traded. The Unique Transaction Identifier (UTI) conveys information about the specific transaction (CPSS-IOSCO 2012). Thirdly, harmonisation of data is meaningful only if data can be shared across jurisdictions, and, therefore, international rules are needed to remove domestic barriers to data sharing (component 3). These three components of the international regime on trade reporting also affect each other. Technical rules on LEI, UPI, UTI, and other critical data constitute core elements of data formatting and are necessary for data sharing across jurisdictions. In turn, the rules on data formatting and aggregation promote the completion of the work on global transaction identifiers as well as data sharing.

We observe important variation (high, medium, low) in the precision and scope of the adopted international standards for derivatives trade reporting. To begin with, we consider the international standards on LEI, UPI, and UTI to display *high precision and broad scope*, as demonstrated by the issuing of single global (LEI, UPI and UTI) identifiers for all financial institutions, followed by the designation of international service providers by the FSB, which we detail in Section 6. As the Executive Director of the European Securities Markets Authority, Verena Ross (2017), put it ‘the LEI is a global success story’. *Medium precision and scope* characterise the other critical elements

of data formatting, whereby detailed rules were agreed (indeed, the relevant document issued by the CPSS-IOSCO was more than one hundred pages long), but national regulators remained free to choose which data elements they required in their jurisdiction. In the case of data access and cross-border sharing, international standards had *low precision and limited scope* because cross-border data sharing between public authorities and trade repositories was agreed in principle but remained limited de facto. The FSB (2017) pointed out that ‘significant challenges’ concerning the ‘access to trade repositories data, including the need to remove legal barriers to authorities’ domestic and cross-border access to trade repositories’. We seek to explain this variation in the precision and scope of the adopted international standards through the joint work of the O (the G20) (Section 4) and the Is (international standard-setting bodies) (Section 5). In Section 6, we examine how the *hub intermediary*, the FSB, took the lead in *de-linking* the more controversial issues from the less controversial ones, where agreement was easier to reach.

4. The orchestrator in the international governance of trade reporting and the main regulatory problems

This section and the following one outline the international governance for trade reporting through the lens of orchestration, thus presenting, respectively, the main O and Is (see also Figure 1 and Table 1). The G20ⁱ stands out as the most relevant IGO in our case and plays a crucial role in the orchestration process (Viola 2014; 2015; see also Posner 2015). At the same time, we identify several important regulatory problems that the O could not solve by itself because of its limited institutional capabilities, focus on issuing broad guidelines rather than concrete international standards, and instances of goal divergence among its member jurisdictions. For example, we observe a proliferation of trade repositories worldwide and the resulting pitfalls of uncoordinated

domestic actions. Due to these important challenges, the O had to find a new approach to managing regime complexity in derivatives trade reporting.

When the G20 Leaders forum was established at the peak of the international financial crisis in 2008, the expectation was that it would act as ‘the premier forum for international economic cooperation’ (G20 2009). In fact, the G20 Leaders has a broad mandate: its responsibility is not confined to specific matters pertaining to financial stability (Helleiner 2014). Unlike other international standard-setters that bring together technical authorities, the G20 brings together political authorities. It also covers a broad set of issues related to global economic cooperation at large, such as trade, development, and environmental policies (Kirton 2016). At the same time, the G20 has limited institutional capabilities because it is state-led and has rather limited resources (Viola 2014). The G20 works by consensus, which means that formally all its members have veto power although, de facto, this mainly applies to the main jurisdictions. Therefore, agreement is often reached at the lowest common denominator (Helleiner 2014). The G20 does not have a legal personality, its own budget, or a bureaucratic apparatus, unlike more institutionalised IGOs, such as the International Monetary Fund (IMF), the World Bank, and the United Nations. The G20 does not even have a permanent secretariat, unlike international standard-setting bodies, such as the BCBS. Instead, secretarial support is provided ad-hoc by the rotating presidency (Kirton 2016).

The G20 meets at the Leaders level once a year (twice a year during the financial crisis and its aftermath) and does not issue either hard or soft law (unlike international standard-setting bodies, discussed below). Its main (formal) outputs are the communiqués issued after the summits. Although the G20 meetings are preceded by extensive preparation, such as workshops, reports, and case studies on specific subjects, much of this preparatory work is not conducted in-house. Instead, the production of technical information for the G20 is carried out by experts in national capitals,

international standard-setting bodies, and international financial institutions (Cooper and Thakur 2013; Posner 2015). According to the orchestration approach, governance actors are more likely to orchestrate when they lack certain capabilities needed to achieve their goals through other governance modes – this is the case with the G20.

Since the G20 is a collective O, bringing together more than 20 member jurisdictions, we examine the goal convergence and divergence among these jurisdictions concerning the international governance of trade reporting. In the wake of the international financial crisis, there was convergence among jurisdictions of the G20 on the goal of mandating the reporting of derivatives trades to repositories (see G20 2009; FSA 2009; Geithner 2009; De Larosière *et al.* 2009). However, initially, there was no agreement on the goal to have international standards for trade reporting. In fact, international standard-setters did not work on this matter for several years (interviews C and D). In the meantime, trade repositories proliferated worldwide, whereas pre-crisis there was only one trade repository, the Depository Trust and Clearing Corporation (DTCC), based in the US. Various jurisdictions issued domestic rulesⁱⁱ to govern the trade repositories on their territory and mandated data reporting only to the domestic regulators. The EU was keen to set up EU-based trade repositories to challenge the market dominance of the US-based DTCC, the largest trade repository in the world, and to make sure that EU regulators could get access to data without facing legal hurdles (interview G). For similar reasons, other jurisdictions, notably in Asia, also established and promoted their own domestic trade repositories (Knaack 2018; Vic Li 2018).

As time went by and the pitfalls of uncoordinated unilateral domestic regulatory actions became evident, the main financial jurisdictions agreed on the goal of international harmonisation of data reporting (e.g. G20 2012; O'Malia 2014; Miller 2014a,b; Cœuré 2015), but not on the specific way to do this (interviews I and J). On the one hand, policy-makers realised that the different domestic

rules on data formatting hindered data aggregation and analysis. For instance, a senior US Treasury official, Mary Miller (2014a), argued that ‘While the development of trade repositories around the world to collect transaction data is significant, we have not yet achieved global standards for data aggregation and reporting. The US Treasury, the CFTC, and our international counterparts all recognize the importance of getting this right’. Similarly, the member of the Executive Board of the ECB, Benoît Cœuré (2015), stressed the ‘large remaining data gaps in the field of derivatives ... especially considering the global nature of these markets and the fragmentation of the financial market infrastructures landscape worldwide. Data are widely available, but they are fragmented and reported in a non-harmonised way’. Policy makers in Asia were also aware of the challenge of data aggregation (see, for example, the Hong Kong Monetary Authority 2015).

On the other hand, several jurisdictions had already adopted domestic rules on these matters in the wake of the 2008 crisis. Notably, the US and the EU used different data formats. Policy-makers and industry (interviews A and H) preferred subsequent international harmonisation that would not entail high domestic adjustment (switchover) costs (Knaack 2018). For instance, US regulators emphasized domestic regulatory autonomy, stressing that the harmonisation of trade reporting data was not the same thing as ‘complete standardization of domestic legal regimes’ (Risknet, 7 October 2017).

The G20 relies on a variety of techniques to promote orchestration, notably: agenda-setting, endorsement, and mandating periodic reports to assess progress (Abbott *et al.* 2015; Viola 2015). In the wake of the 2008 crisis, at the summit in Pittsburgh in 2009, the G20 leaders singled out the reporting of derivatives trades to repositories as one of the key priorities of post-crisis regulatory reforms and agreed that OTC contracts should be reported to trade repositories (*agenda-setting*).

The G20 asked the FSB to take the lead by preparing recommendations for the ‘appropriate

governance framework’, ‘representing the public interest’ for a global LEI (G20 2011). Then, the G20 (2012) at the Los Cabos Summit endorsed the FSB’s recommendations for the development of a global LEI system to be launched by March 2013 (*endorsement*).

Afterwards, the G20 remained the main O, maintaining political pressure for reforms and relying on the FSB to carry out all the policy coordination needed to align the work of all other intermediaries involved in the orchestration. For example, the G20 Hangzhou summit in 2016 reiterated the commitment to ‘remove legal and regulatory barriers to the reporting of OTC derivatives to trade repositories and to authorities’ appropriate access to data’ (G20 2016). However, this was done with some discontinuity and by devoting a limited space to financial regulation on the G20 agenda, because finance had become less politically salient (Viola 2014). The G20 also periodically asked Is (that is to say, international standard-setters in finance), to report progress on the work that they were carrying out (*reporting*). For example, for the first three years after the crisis, the FSB submitted to the G20 an annual *Report on the Progress in the Implementation of the G20 Recommendations for Strengthening Financial Stability*.ⁱⁱⁱ Afterwards, once a year, the FSB’s chair sent a letter to the G20 on financial reforms and prepared annual *Reports on the Implementation of G20 Financial Regulatory Reforms* for the G20 summits.

5. The intermediaries and targets in the international governance of trade reporting and regulatory pitfalls to be addressed

The Is in trade reporting are primarily international standard-setting bodies, that is to say, transgovernmental networks of domestic financial regulators dealing with various inter-linked issues in trade reporting. Transgovernmental networks of regulators have some core features: they are multilateral bodies that are not established pursuant to treaties; their membership consists of

domestic regulatory agencies; they work by consensus; and they issue (not legally binding) soft laws (Brummer 2015; Bach and Newman 2014; Jordana 2017; Newman and Posner 2018; Verdier 2009). These soft laws become legally binding only after they are incorporated into the domestic legal framework of various jurisdictions. Financial regulators generally take the lead in the implementation of the internationally agreed upon standards at the domestic level. Hence, these Is deal directly with the Ts of the standards, be they states or private actors. International standard-setters (Is) have resources that the G20 (O) lacks, notably: technical expertise; a track record in international cooperation, including in regulatory harmonisation; and, in some cases, monitoring capabilities (Abbott *et al.* 2015; Viola 2015).

At the same time, if all these bodies produce standards in their narrow area of specialisation without overall coordination, the resulting international regulatory patchwork is likely to contain gaps, overlaps, and inconsistencies. To avoid this regulatory problem, the G20 and the FSB sought to organise and align the work of the many international standard-setting bodies (Is) involved in governance of derivatives trade reporting. These Is had similar objectives: to make the system work by addressing the problem at hand (i.e. ensuring the international interoperability of trade reporting) to stay in business and safeguard their existing competences. Therefore, they were willing to accommodate and work with other players in the field. Orchestration made it possible to use efficiently the expertise of existing international bodies with an established track record, reducing the set-up costs and limiting uncertainty about performance. The alternative governance approach of creating a completely new international body to regulate derivatives would have entailed no established track record, high set-up costs, and no pre-existing ties to related policy areas.

There were multiple existing Is and new ones were established in the wake of the 2008 crisis and specifically in derivatives regulation. To begin with, the CPSS, which was established in 1990 and

was renamed as the Committee on Payments and Market Infrastructures in 2014 (CPMI), brings together central bankers. The IOSCO, established in 1989, brings together securities markets regulators. The FSB brings together central bankers, financial regulators, and treasury ministry officials from the G20 countries.^{iv} It also includes representatives from all other international standard-setting bodies (the CPSS/CPMI, the IOSCO, the BCBS, the International Association of Insurance Supervisors (IAIS), the International Accounting Standards Board (IASB)), as well as the Bank for International Settlements (BIS), the World Bank, the International Monetary Fund, the Organisation for Economic Cooperation and Development. Furthermore, a new I, the Global LEI Foundation, was established and a non-financial international standard-setter, the International Standardisation Organisation (ISO), issued rules on the LEI code. The ISO brings together ‘general’ national standard-setters, such as the American National Standards Institute, British Standards Institution, and the German Institute for Standardization.

The Ts of orchestration were states, first and foremost, the national competent authorities supervising derivatives, and private actors, primarily, trade repositories and financial firms. At the same time, the Ts varied across the three components. The scope was the widest in component 2, where states, trade repositories, and the financial industry were all addressees of the international standards issued. Table 1 below summarises the configuration of O-I-T in the case of derivatives trade reporting and the outcome that we seek to explain.

Table 1: Orchestration configuration in the international governance of trade reporting

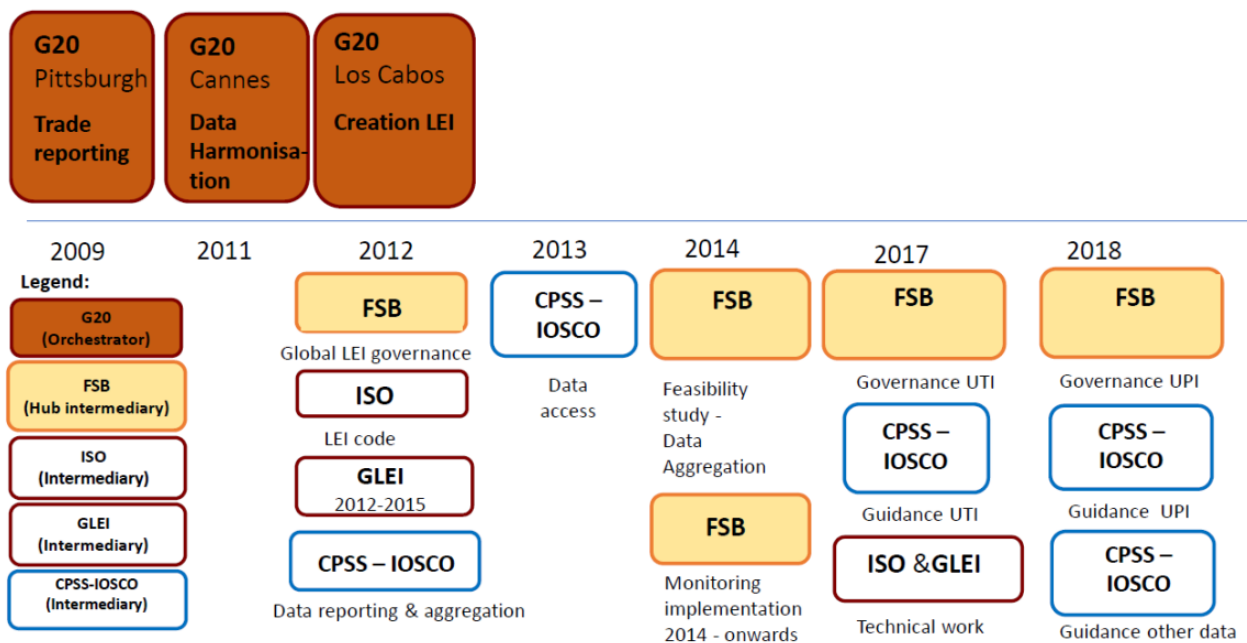
| Component of trade reporting regime | Outcome | Orchestrator | Intermediary(ies) | Targets |
|---|----------------------------|---------------------|---|--|
| Harmonisation of data formats (<i>component 1</i>) | Medium precision and scope | G20 | FSB (hub intermediary) CPSS – CPMI IOSCO | States, Trade repositories |
| Issuing of global identifiers LEI, UTI, UPI (<i>component 2</i>) | High precision and scope | G20 | FSB (hub intermediary) CPSS – CPMI IOSCO ISO LEI Foundation | States, Trade repositories, Financial industry actors |
| Data access and cross border data sharing (<i>component 3</i>) | Low precision and scope | G20 | FSB (hub intermediary) CPSS – CPMI IOSCO | States, Trade repositories |

6. Hub intermediary and issue de-linkage in the orchestration of international trade reporting

This section analyses the variation in the precision and scope of international standards on trade reporting, paying particular attention to the *hub intermediary*, the FSB, and the mechanism of *issue de-linkage* to explain why we observe high, medium and low precision and scope of the adopted international standards in the three interlinked components of the international regime (see Table 1). To begin with, the FSB was well positioned to act as a hub intermediary in the international governance of derivative trade reporting. Established by the G20 in the wake of the international financial crisis in 2009, the FSB built on the work of its predecessor, the Financial Stability Forum, to promote international financial stability by coordinating the actions of different national financial authorities and international standard-setting bodies (Donnelly 2012; Posner 2015). With hyperbole, the FSB was described by US Treasury Minister Geithner as a novel ‘fourth pillar’ of the global economic architecture, alongside the International Monetary Fund, World Bank, and World Trade Organization (Helleiner 2010).

In fact, the FSB was more of a transmission mechanism between the G20 and international standard-setters composed of domestic regulators (Pagliari 2013b). Helleiner (2010) notes that the Charter of the FSB gave this body a specific mandate to ‘promote and help coordinate the alignment of the activities’ of international standard setters and to ‘undertake joint strategic reviews’ of their work to ensure it was ‘timely, coordinated, focused on priorities and addressing gaps’, while respecting other bodies’ mandates and independence. Following the 2009 Pittsburgh Summit, the G20 put the FSB in charge of coordinating the formulation and implementation of OTCDs reforms (Donnelly 2012). Applying the O-I-T model, Figure 1 summarises the main G20 summits guiding the reforms of derivatives trade reporting and the subsequent policy actions of the Is, coordinated by the hub intermediary (FSB).

Figure 1



Since there was a collective O and multiple Is, the FSB emerged as a *hub intermediary* due to its institutional proximity to the O (the G20) and a variety of resources, such as technical expertise and administrative capacity, in particular, a highly professional secretariat experienced in working with

both the G20 jurisdictions and with other international standard setting bodies. Moreover, representatives of other Is (such as the BCBS, the CPMI, the IOSCO) have a permanent seat in the FSB, which facilitates its work in organising and aligning the work of other relevant Is in the regime complex. As we show below, the FSB also took the lead in translating the broad G20 intentions and guidance into concrete international standards. Moreover, given the mixture of agreement and disagreement among states affected by the proposed international standards, issue de-linkage by the hub intermediary was instrumental in identifying potential areas of agreement and managing regime complexity.

The FSB played an important overall coordination role. It fostered a deliberate division of labour amongst the international standard-setting bodies, facilitated by the fact that the FSB included representatives from all other relevant international standard-setting bodies (for a similar interpretation, see Brummer 2015: 70). To understand how the FSB made a difference in crafting mutually acceptable international standards, it is worth considering that early reform efforts, such as the initial work of the CPSS-IOSCO (2012b) to develop *Principles on Financial Market Infrastructures* did not lead to much progress. This report bundled together all the main components of trade reporting, that is to say, issues concerning global identifiers, other critical data formatting, and cross-border data sharing. The report overestimated the incentives that market actors would have to establish systems of global identifiers, it underestimated the complexity of harmonising other critical data for regulators, and, importantly, it overlooked the political and legal obstacles to data sharing among jurisdictions.

Upon realising the lack of progress, the G20 called upon the FSB to give further impetus to international standard-setting in this area. At that time, the FSB also considered the trade-off whether to push for a complete package of international standards, covering data identifiers, data

harmonisation, and data sharing, or to proceed step by step, starting with the least controversial issues first, despite the risk of being left with an incomplete international regime. Opting for the latter approach, the FSB asked the CPMI-IOSCO to focus on the harmonisation of UTI, UPI, and other critical data; it brought in additional (non-financial) standard-setters, notably the ISO, which carried out some of the most specialised work concerning LEI, building on its track record in regulating data standards; and it established a new intermediary – the LEI foundation (FSB 2012, 2017, 2018a). The FSB also took up the issue of the LEI, UTI and UPI governance structures, which were ‘politically sensitive’ and ‘gave new impetus to the process’, whenever the other international standard-setting bodies – such as the CPMI-IOSCO (2017a, b), which carried out most of the ‘technical’ work – reached an impasse (interviews I and J). Finally, the FSB took upon itself the work on cross-border data sharing, which was complicated by the fact that trade repositories were ‘usually subject to professional secrecy requirements, including relevant confidentiality/privacy/data protection laws’ and that they often could ‘transmit data only to domestic authority(ies)’ (FSB 2014: 20; 2018b).

Ultimately, the FSB decided to de-link the main issues at stake and to divide the tasks among the most relevant existing international standard-setting bodies, or to initiate the creation of new body where that was necessary (interviews, B and E). We detail how this process unfolded below regarding the three components of the international regime on derivatives trade reporting introduced in Section 3: harmonisation of data format and aggregation, especially for critical data (component 1); issuing of global identifiers for legal entities, transactions, and products (component 2); data access and cross-border sharing (component 3). The analysis proceeds from the component where issue de-linkage was most successful in producing international standards with high precision and scope (component 2) to the component where the issue de-linkage efforts of the FSB were least successful and the adopted international standards have low precision and scope (component 3).

Global identifiers (component 2)

The FSB took the lead in promoting global identifiers, in collaboration with other international standard-setters within and beyond the financial sector. To begin with, the FSB (2012) set out 15 global high-level principles and 35 recommendations for the development of a unique identification system for parties to financial transactions. Under the auspices of the FSB, an additional I, the ISO, which is an international standard-setter outside the financial sector became involved and issued the Standard 17442 on the LEI.^v The FSB then established a new I to administer the Global LEI system – the Global LEI Foundation – which is a not-for-profit organisation.^{vi} The LEI Regulatory Oversight Committee, which comprised public authorities from more than fifty jurisdictions, was to oversee the Foundation, which managed the Central Operating Unit, provided a centralised database of LEIs, and corresponding reference data on its website. From 2015 onwards, financial firms that wished to become LEI issuers needed to be accredited by the Global LEI Foundation, which monitored their compliance with the standards of the Global LEI system. Moreover, Local Operating Units were established worldwide. By the end of 2018, over 1.2 million entities from over two hundred countries had obtained LEIs from more than thirty operational issuers accredited by the Global LEI Foundation, which indicates the success of this governance solution for market participants.

As for the development of the other global identifiers, the FSB (2014) stressed that for data aggregation to work, it was critical to complete the standardisation of important data elements, including the LEI, the UPI, and the UTI. The FSB sought to distribute the tasks among the other relevant intermediaries. It reached out to the CPMI and the IOSCO with a request to develop global guidance on data harmonisation (interviews, I and J). Issue de-linkage took place when the FSB

approached the CPMI-IOSCO to deal with the more ‘technical part’ of data formatting and aggregation, and the FSB itself took up the more ‘controversial part’ that involved the governance structure for the management of UTI and UPI (interviews B and E). Thus, the CPMI-IOSCO (2017) proceeded with issuing *Guidance Harmonisation of the Unique Product Identifier* and the FSB (2018) issued *Governance Arrangements for the Unique Product Identifier*. Furthermore, the FSB designated the Derivatives Service Bureau^{vii} as the sole issuer of the UPI code, while UPI reference data would be set as an international data standard to be maintained by the ISO. Similarly, the CPMI-IOSCO (2017) issued *Guidance Harmonisation of the Unique Transaction Identifier* and the FSB (2017) issued *Governance Arrangements for the Unique Transaction Identifier (UTI)*, also designating the ISO as the responsible body for maintaining the UTI data standards. In 2020, the FSB (2020) expanded the tasks of the Regulatory Oversight Committee, the governance body of the Global LEI System, by designating it as responsible for the governance of UPI, UTI, and other critical data elements.

Overall, the FSB succeeded in fostering international agreement to set up global identifiers (interviews J and K). Thus, the LEI, UPI, and UTI were portrayed by the CFTC as the ‘The Rosetta Stone of Swaps Data’ (O’Malia 2014). Likewise, the member of the Executive Board of the ECB, Benoît Cœuré (2017a), and the Executive Director of the ESMA, Verena Ross (2017) agreed that, after setting-up LEI, it was critical to complete the harmonisation of essential data elements through the establishment of UTI and UPI.

Harmonisation of other critical data (component 1)

The international harmonisation of critical data (other than UPI and UTI) for trade reporting was more challenging. The FSB’s efforts to promote international standard-setting in this area through

issue de-linkage were only partly successful. In 2012, the CPSS-IOSCO (2012a) issued a report that was very general and did not specify the formats of data reporting. As one policy-maker put it ‘with hindsight, this report was rather optimistic, but, as time went by, the challenge of harmonising data reporting requirements became clear’ (interview, D). Indeed, US Treasury Undersecretary, Mary Miller (2014b), noted that:

A great deal of work still needs to be done to ensure that the data reported by industry and collected by regulators will be as useful as possible, or we will be at risk of not achieving that goal. The data are fragmented, with many different trade repositories, within and across jurisdictions, collecting different kinds of information in different ways, keeping us from putting all of that information together to develop a full picture of the market. We need to roll up our sleeves and address any obstacles to making these data useful for market participants and for regulators who are monitoring financial stability.

In order to address the problem of data fragmentation, the CPMI-IOSCO (2018) issued *Guidance on the Harmonisation of Critical OTCs Data Elements (other than UTI and UPI)*, taking into account the relevant standards developed by the ISO in the meantime, as discussed above. On the one hand, the Guidance was rather detailed; it even included ready-to-use tables that had to be filled in. On the other hand, the Guidance allowed for national discretion. It was provided to the national authorities rather than directly to market participants. Neither did it mandate which critical data elements were to be reported in each jurisdiction (CPMI-IOSCO 2018: 7).

Data access and data sharing (component 3)

Initially, the politically sensitive issue of regulators’ access to data was mentioned, but ultimately side-stepped, by the CPSS-IOSCO (2012). As an incentive for international coordination regarding data access and data sharing, key jurisdictions, such as the US and the EU, realised that they needed access to data held in other jurisdictions in order to have a more complete overview of the global

derivatives markets (e.g. O'Malia 2014; Miller 2014a,b; Cœuré 2015; Ross 2017). For instance, the CTFC pointed out 'the urgency for a holistic view of the financial markets, without borders, was underscored by how the financial crisis caught the world by surprise. Data that could have identified systemic risk was fragmented across regulators and nations. Risk knows no boundaries. Our ability to monitor it shouldn't have any either' (O'Malia 2014). However, there was limited goal convergence because each jurisdiction preferred to have access to the data of trade repositories located in other jurisdictions, but without reciprocity, that is to say, without giving foreign authorities access to the data of trade repositories located on their territory (interviews B, C and D).

Afterwards, given the increased number of trade repositories (more than 100 worldwide) and the transatlantic dispute on this matter (Knaack 2015; Posner 2018; Gravelle and Pagliari 2018), the CPSS-IOSCO (2013) issued *Authorities' Access to Trade Repository Data*, outlining a 'data access model', whereby trade repositories would provide data requested by the authorities, subject to legal restrictions and confidentiality considerations. To avoid cross-border problems, the document suggested that regulators should put in place agreements to address relevant legal obstacles, but it refrained from offering specific guidelines about how to achieve this.

Data access and data sharing have remained controversial for important members of the G20, such as the US, the EU, and China. In the US, data sharing was a sensitive matter because the Dodd-Frank Act (2010) – the most significant US regulatory response to the 2008 financial crisis – mandated that US-based trade repositories should obtain indemnification from foreign regulators before sharing information (Knaack 2018; Pagliari 2013a). Thus, US regulators were eager to get access to data of trade repositories in other jurisdictions, but they were reluctant to grant reciprocal data access to foreign regulators without indemnification. In response to the US rules restricting foreign regulators' access to data held by domestic trade repositories, EU legislation made cross-

border data sharing conditional on the signing of an international agreement between the European Commission and third countries concerning mutual access to data (Buckley *et al.* 2012). Cross-border data sharing was also very sensitive in China. As late as 2018, China did not have a legal framework permitting access to data held in a domestic trade repository by foreign authorities (FSB 2018).

Even though the FSB subsequently took up the issue, its efforts to act as a hub intermediary were not successful (interview, February 2019). As one regulator noted, ‘cross-border data sharing was and still is a very sensitive matter for regulators and industry’ (interview D). The FSB has monitored periodically the removal of barriers to data access, intending to maintain pressure for reform. In its most recent report, the FSB (2018) concluded that only about half of the G20 jurisdictions had taken steps to remove barriers to access to trade repository data by foreign authorities. This outcome also highlights the limits of the G20 as a collective O and the FSB as a hub intermediary if there is persisting goal divergence among jurisdictions on a given issue. Furthermore, just as issue linkage does not always solve deadlock in negotiations, issue de-linkage is not a panacea for overcoming disagreements among jurisdictions.

7. Conclusion

This article analysed a new area of reform in international financial governance – the reporting of derivatives trades to repositories – through the lens of orchestration. Specifically, we set out to explain why there was uneven progress in the precision and scope of the three main components of the international regime: (1) the harmonisation of data formats; (2) the issuing of single global identifiers; and (3) data access and cross-border data sharing. Drawing on the orchestration framework, we examined the role of the G20 as the main O and unpacked the interaction between

the G20, the different Is involved, such as the FSB, the CPSS/CPMI, the IOSCO, the ISO, the Global LEI Foundation, and the Ts, states and private actors in this case. Overall, orchestration is a particularly promising framework to analyse the management of regime complexes, which have become widespread in the global economy and in world politics.

By bringing together regime complexity and orchestration theory, we contribute to both these frameworks. To begin with, we argue that regime complexity can be successfully managed, albeit to different degrees, by making efficient use of available Is and by de-linking consensual from contested issues, so that managing the former is not hold up by the latter. The findings of this research do not sit well with part of the literature on regime complexity that stresses the role of state strategies, such as regime shifting, forum shopping and institutional adaptation, in managing regime complexes. Instead, the case of derivatives trade reporting suggests that regime complexes are to a significant extent shaped and managed through the agency of the participating institutions, in particular, IGOs and international standard setting bodies, not through hard, direct means of control, but rather through soft, indirect instruments. Our analysis shows that regime complexity is neither the problem nor the solution - the problem, rather, is interstate conflict. The solution can be orchestration. Much of the regime complexity literature assumes that the co-presence of multiple international bodies in the same policy area is problematic. However, this is not always the case. Multiple international bodies can be associated with both regulatory success, as in the case of global identifiers, and with regulatory failure, as in the case of cross-border data access and data sharing. In fact, more intermediaries were involved in the success case than in the failure one. Our findings suggest that the problem is not so much the number of IOs involved, but the extent of goal divergence among states in the collective orchestrator (the G20 in this case).^{viii}

As for orchestration, our analysis highlights the importance of a *hub intermediary* – the FSB – and identifies the causal mechanism of *issue de-linkage*. Both concepts are important from the perspective of evolving systems of governance, especially in newly emerging international regime complexes, faced with a lot of fundamental uncertainty. To manage this uncertainty, a *hub intermediary* brings important administrative and organisational resources that can align the work of the multitude of relevant Is and identify potential areas of agreement among states in the collective O. While the impact of issue linkages has been well-investigated and found to lead to more agreement in certain international negotiations (for instance, in trade), similarly, issue de-linkage can also foster agreement on common international standards.

It is noteworthy that orchestration allowed the G20 countries to set the trade reporting standards for the rest of the world. Precisely because orchestration is ‘soft’, it allowed the G20 to govern beyond their formal jurisdiction of their combined territories. For instance, the LEI regulatory oversight committee (one of the intermediaries) includes the public authorities of 50 jurisdictions. These findings can travel to other policy areas within and beyond finance characterised by regime complexity, for instance, shadow banking, trade, energy, and environmental policy, which provide compelling venues for further research.

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List of tables and figures

Table 1: Orchestration configuration in the international governance of derivatives trade reporting

Figure 1: Orchestration configuration and timeline of international standard-setting on derivatives trade reporting

Notes:

ⁱ At present, the members of the G20 Leaders are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom, the United States, and the European Union.

ⁱⁱ In the US, the CFTC adopted domestic rules on trade reporting in 2011, whereas the EU adopted domestic rules on trade reporting in 2012 (Quaglia 2014).

ⁱⁱⁱ These reports are available at: https://www.fsb.org/work-of-the-fsb/implementation-monitoring/progress-reports-to-the-g20/?mt_page=2

^{iv} In the case of smaller G20 jurisdictions, only the national central bank is a member of the FSB.

^v This standard is available at: <https://www.iso.org/committee/49650.html>

^{vi} More information available at: <https://www.leiroc.org/>

^{vii} A subsidiary of the Association of National Numbering Agencies that monitors national numbering agencies for compliance with various standards on behalf of ISO.

^{viii} We wish to thank an anonymous R&G reviewer for raising this point.