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The Political Economy of the G20 Agenda on Financial Regulation

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CESifo *Working Paper No. 8509*

The Political Economy of the G20 Agenda on Financial Regulation

Abstract

The paper empirically examines the implementation record of international financial regulation of the banking sector. The study finds that the size of the banking sector and the presence of global systemically important banks (G-SIBs) are positively associated with a stronger implementation record. These results suggest that cooperative motives of internalising externalities, creating a level playing field and preserving financial stability play a role in explaining the implementation record. We find evidence that this cooperative behaviour may be driven by the self-interest of global players as the positive record is particularly strong in countries where large banking sectors and big banks are both present, and where regulation only applies to large players. Sectoral concentration, bank health and the share of foreign ownership yield more mixed results as regards their impact on implementation.

JEL-Codes: D700, F550, G150, H260.

Keywords: policy coordination, international public goods, financial regulation, rent seeking.

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1. Introduction

Financial regulation, supervision and stability have historically been a national responsibility. But ever since the Great Depression, international externalities and spillovers have exposed the international public good character of financial stability and the need for international regulation and safety nets. International safety nets would help mitigate the adverse effects of global financial and liquidity shocks and international regulation would aim to prevent national regulatory deficiencies and beggar-thy-neighbour policies.

As a lesson of the Great Depression and World War II, the International Monetary Fund was created as an international credit provider. Following severe disturbances in international currency and banking markets, the then Group of Ten countries in 1974 established the Basel Committee on Banking Supervision (BCBS) as a forum for cooperation on banking supervision. However, it took until the 1980s until international rules for the financial sector were agreed, starting with the Basel Accord in 1988 on capital requirements (Kapstein, 1989; Monticelli, 2019).

Though evolving, international and national financial regulation has repeatedly proven highly deficient, as numerous crisis over recent decades and the global financial crisis show. The global financial crisis also brought to the fore broader economic and political stability risks.[1] In 2009, the G20, in conjunction with the Financial Stability Board (FSB) and its 24 member countries, agreed to develop and implement the third Basel package, a new set of international rules for banking, insurance, derivatives and asset management with a particular focus on addressing systemic aspects.[2] As members have been implementing the agenda over the 2010s, the BCBS has monitored progress closely and the FSB has regularly reported on this progress to the G20 (FSB, 2015-2019).

This paper analyses whether the implementation of international financial regulation, and specifically, the set of Basel III regulations, appears to reflect cooperative behaviour between countries with the aim of internalising externalities and committing to stronger financial sectors, or whether special interests have had a determining influence via lobbying for delayed implementation. The study focuses on the implementation of key regulatory provisions for banking, notably capital, liquidity and long-term funding, resolution and recovery planning and OTC derivatives requirements.

It finds that the size of the banking sector and the presence of global systemically important banks (G-SIBs) are positively associated with a stronger implementation record. These results suggest that cooperative motives of internalising externalities, creating a level playing field and preserving financial stability play a role in explaining the implementation record. We find evidence that this cooperative behaviour may be driven by the self-interest of global players as the positive record is particularly strong in countries where large banking sectors and big banks are both present, and where regulation only applies to large players. Sectoral concentration, bank health and the share of foreign ownership show more mixed signals as regards their impact on implementation.

The empirical strategy does not allow us to unambiguously determine whether these jurisdictions cooperate for the common interest or due to the self-interest of domestic but globally operating industries. However, the fact that countries with large banking industries and G-SIBs and those where the rules only apply to big banks have a better implementation record suggests that cooperation due to

[1] The global financial crisis resulted in weakened financial positions of several governments and it exposed deficiencies in the international safety net arrangements notably in Europe. The fiscal costs of the crisis were unprecedented in many countries and reached up to 35% of GDP for bailing out the banks alone; public debt increased to an OECD average of about 100% of GDP, turning the financial into a fiscal crisis in several European countries (IMF, 2015; Borio et al 2019; Schuknecht, 2019).

[2] The FSB includes the G20 countries plus the Netherlands, Singapore, Spain, Switzerland and Hong Kong (China). This comprises all relevant international financial centres.

the self-interest of the (global) players may be an important motive. It may also point to the pursuit of narrow special interests by smaller domestic banks.

Our results are consistent with the literature that emphasises the benefits of regulation and the adverse effects of regulatory capture, but it also shows that in practice, these dynamics may be more nuanced and that international and industry interests may have become more aligned. More work is needed to understand the implementation record and differentiate more clearly between the underlying motives.

2. Literature

This study is part of the broader literature on the political economy of financial regulation and its implementation in an international organisation context (see Annex Table 1). Recent political economy models on regulatory capture in banking are grounded in important early work by Stigler (1971) that describes the pressure that firms place on regulators to suit their interests. Such pressure may be exerted at the political level or directly to regulators, for example by providing one-sided information or by offering favours. This theory was expanded on by Laffont and Tirole (1991), who noted that capture is more successful in concentrated industries and when regulation is complex. More recently, Hardy (2006) argued that regulation in the financial sector may indeed be particularly prone to capture, partially due to its complexity and the close proximity of regulators to the industry. At the same time, he argues that the presence of capture does not necessarily imply looser regulation. Rather, banks may prefer stricter requirements in order to mitigate negative spillovers of risk-taking by weak banks. This also implies that without international cooperation, as banking sectors and their interests differ across countries, regulatory divergence may arise (Hardy, 2006; Holthausen and Ronde, 2004).

The dominant role of special interests in the design and implementation of regulation is corroborated by a large body of empirical evidence. In a historical study, rent seeking was found to play a prominent role in US usury laws in the 19th century (Benmelech and Moskowitz, 2010). Empirically, it is found that capture does in some cases lead to regulatory failure and has provided fertile ground for financial crises. In their historical overview of how political and private interests have shaped banking sectors, Calomiris and Haber (2014) show that the complex bargains between industry and politics have resulted in chronic weaknesses in financial systems. Igan and Lambert (2019) argue that special interests undermined support for tight rules and enforcement before the global financial crisis. There is evidence that the first mover advantage of the international financial industry captured the Basel II negotiations (Lall, 2012). It is also suggested that regulatory capture may recur in a cyclical manner, due to a tendency of rule erosion as the distance from crises rises (Dagher, 2018). Wah Hlaing and Kakinaka (2018) argue that financial crises lead to policy reforms, but not necessarily to a strengthening of prudential regulation.

There are, however, also studies putting into question the capture hypothesis. Young (2012) argues that the claims of capture are overstated and the influence of lobbies was less than often argued. He shows that special interests only had limited success in weakening regulation even during Basel II negotiations. The success of capture is likely to be strongly influenced by the quality of governance (Calomiris and Haber, 2014). Indeed, a large empirical study looked at 65 banking crisis episodes and finds a significant negative correlation between supervisory quality and crisis, suggesting that supervisory quality can indeed play a preventative role against crisis (Amri and Kocher, 2012).

While under normal circumstances national implementation of financial regulation may be hampered by special interest motives, a global framework may act as a commitment device and overcome the game theoretical obstacles of unilateral regulatory action. International organisations provide a forum for coordinated action as they produce club goods for their members by allowing package deal negotiations and by ensuring the implementation (and, thereby, the time consistency) of international agreements. They can also serve as scapegoats diverting the political blame and costs from national

players. As such, international coordination may provide for sufficient incentives to overcome capture (Dreher and Lang, 2016; Vaubel, 2004 and 2006).

In the case of global financial regulation, the international character of the financial industry, paired with the presence of national industry specificities, enforcement authority at the national level and the need for adaptability of international rules in a dynamic environment, resulted in international (soft law) agreements in the G20/FSB that were then transposed in national law (Monticelli, 2019, see also Slaughter, 2000 for the important role of international networks in the financial sphere). The enhanced mandate of the FSB with improved coordination of supervision and enforcement/peer reviews and greater transparency shows a "greater institutional backing" of the FSB-based agreement "without moving to a fully treaty-based hard-law solution" (Arner and Taylor, 2009).

Congruent with the idea that banks may push for regulation in order to minimise financial instability risk, there is evidence that firms benefit from agreement on global standards (Farrell and Newman, 2015). Quaglia (2017a) finds that international firms contribute to international dispute settlement and, thereby, the implementation of rules. The dominance of US and UK banks, however, also implied the respective countries' dominance in the design of regulation, e.g. bank resolution standards (Quaglia, 2017b).[3] International organisations, however, may also be susceptible to interest group capture as they do not face re-election constraints and are removed from national public and media scrutiny (Dreher and Lang, 2016; Vaubel, 2004 and 2006).

The literature on the role of the international G-formats in the financial sphere is quite limited but still informative. The G8 has used international organisations as networks or fora to push through international policy coordination while also using the organisations' expertise (Gstoehl, 2008). The G8 used this avenue in particular when it controlled a large share of the votes, such as in the IMF. Kapstein (1989) argued that the successful negotiation of capital standards in the G10 in 1987 reflected the emerging consensus on systemic risk in this network plus the strong leadership by the United States and United Kingdom.

In a similar vein, the G20 could be seen as a global broker for a strengthened financial regulatory environment and safety net (Cheng, 2016). With the G20 combining 85% of global GDP and a dominant share of the votes in all international organisations this is consistent with the Gstoehl hypothesis. Monticelli (2019) discusses the creation of the FSB and its role as a new key institution in global financial governance. The members represent all global financial centres. The involved IOs, central banks and supervisors also bring together the relevant global expertise. There is, however, little systematic empirical analysis for the implementation of the G20/FSB post crisis agenda.[4]

Finally, numerous studies analyse the impact of the new global regulatory framework on financial regulation. Boissay et al. (2019) provide a meta-analysis of about 100 studies on the effect of financial regulation in the banking area (capital, liquidity, long-term funding). The FSB conducted analyses on the effect of regulation on infrastructure finance, OTC derivative markets and small and medium-sized enterprises (FSB, 2018a, 2018b, 2019). A few studies have also looked at the risk shifting from the banking to the less-regulated market-based finance sector and how this could, in turn, shift the

[3] In the EU, the translation of Basel III into the Capital Requirements Directive IV reflects the interest of the financial industry of the key players France, the United Kingdom and Germany (Howarth and Quaglia, 2013). Moreover, centralisation preferences in the EU depend on foreign ownership and domestic bank internationalisation in national banking systems (Spendzharova, 2014).

[4] The FSB itself launched in May 2019 an evaluation of too-big-to-fail reforms, covering i) standards for additional loss absorbency through capital surcharges and total loss-absorbing capacity requirements, ii) recommendations for enhanced supervision and heightened supervisory expectations, and iii) policies to put in place effective resolution regimes and resolution planning and to improve the resolvability of banks.

burden from the financial sector to governments (see BIS quarterly reports; Knight, 2018; Borio et.al, 2019, Schuknecht, 2019).

Our study complements the literature by analysing empirically the implementation of the post-crisis financial regulatory agenda of G20 and FSB and its relation to variables that proxy the underlying motivation. While the literature often examines motives of regulation and regulatory capture in the process of regulation design, we consider the possible role of such motives in the implementation phase. To our mind, this question is important because implementation of international agreements is essential to ensure more financial stability and lower risks of national and international bank bailouts and spillovers. It is important to know whether special interests delay or undermine the timeliness and quality of implementation or not.

The literature supports the possibility of both cooperation and special interest motives as argued above. In particular, it provides arguments that international cooperation and implementation may have become more relevant than in the past notably as an increasingly global financial industry has a greater incentive to internalise possible externalities and level the playing field via regulation.

There are a few further conceptual considerations beyond Monticelli (2019) and others that we have not seen being discussed in the literature and that may have helped prevent or at least limit special interest capture. The first consideration refers to the decision making process in G20/FSB as opposed to the pre-crisis Basel process. Under the spotlights of the G20/FSB process, the implementation of financial regulation has received much more public and political scrutiny.[5] Moreover, the consensus principle in the G20 ensures that no jurisdiction is forced to participate (or can opt out).

In addition, the FSB set-up has probably been conducive to successful decision making. There are trade-offs between more selective membership, which reduces negotiation cost, and a more extensive membership, where a larger share of the global economy is covered (Buchanan and Tullock, 1962). In the financial area, the G20 decided on a limited membership of the FSB, as this meant that much of the FSB membership was also a G20 member (see Gstoehl, 2008) and as the many small, non-participating countries did not contribute significantly to global financial stability risks. The G20/FSB framework with 24 members was more likely to lead to consensus than a larger UN-type setting. And while decisions were made in the FSB "club" the positive externalities are global.[6]

All this implies that the value of the agreement (on the international public good "financial regulation") is enhanced by the fact that all relevant players participate. Free-riding incentives of non-implementation are reduced via annual reviews. These reviews and resulting transparency, in turn, can strengthen the commitment role for governments and financial systems that aim to enhance credibility and trust via stronger banks.

As mentioned, much of the literature focuses on the agreement on financial regulation and their determinants. While the G20/FSB agreement on a global regulatory framework was indeed the prerequisite for successful regulation of the sector, the proof of the pudding lies in the eating, which here means the quality and speed of implementation. In the following, we therefore, study the record

[5] The G20 mandated the FSB as an international standard setter. The FSB manages the process including translating an agreement into operational guidelines and enforcement/reviews. The members of these fora, in turn, implement the guidelines into national law. The FSB monitors implementation and reports on non-compliance to the G20. The G20 process, thereby, also made failure of negotiations in the FSB more visible and costly.

[6] International public goods are more difficult to provide if they are costly. It probably helped agreement that there was no need for taxes or financial transfers to finance the process around international financial regulation. Financing the FSB is very inexpensive and the cost of implementation occur at the national level.

of implementation in six key areas of international financial regulation in banking for which also frequent and consistent monitoring updates are available and discuss the relevant dependent and independent variables and the related hypotheses from the perspectives of global co-operation and political economy (Annex Table 2).

First, and perhaps most important for stability and resilience of the financial system are the revised minimum capital standards of the BCBS. Ensuring that banks have adequate capital allows them to absorb shocks, which, in turn, mitigates insolvency risk. Due to their impact on bank profitability, capital adequacy standards are more prone to capture, and it has been argued that in the absence of sufficient coordination regulators will regress into a "race to the bottom" in order to allow banking sectors to compete (Acharya, 2003). The revised minimum capital requirements in the Basel III package that were agreed upon following the Global Financial Crisis include an increase of the minimum capital adequacy ratio from 2% to 4.5% in addition to a capital conservation buffer and a counter-cyclical capital buffer plus surcharges for systemically relevant banks. The requirements were designed to be mandatory only for all internationally active banks, although a number of FSB jurisdictions have made them applicable to all banks.

The Basel III package also introduced two new measures to strengthen the availability of banks' short and long-term funding. Through the Liquidity Coverage Ratio (LCR), banks are required to hold an adequate stock of high-quality liquid assets, which ensures that banks have sufficient liquidity at all times. The Net Stable Funding Ratio (NSFR) was designed to improve the quality of banks' funding streams over a longer time horizon and limit excessive reliance on unstable funding.

The fourth and fifth areas we consider are the implementation of recovery and resolution planning requirements and the temporary stay, bail-in and transfer powers by regulators and supervisors. These regulations aim to prevent very costly, disorderly and contagious bankruptcies which, in turn, would worsen the "too big to fail problem". The final, sixth area concerns the implementation of margin requirements for non-centrally cleared derivatives. This is the most important element of enhancing the resilience of OTC derivative markets and, thereby, prevent adverse effects from counterparty risk (when derivative clearance fails).[7]

For each of these six areas of regulation, we consider whether implementation is driven by motives to internalise externalities and create a global level playing field or rather hindered by special interest incentives. We quantify the implementation record of international financial regulation with the help of annual FSB and BCBS implementation reports. These reports record the timeliness and quality of progress made by countries in the implementation of banking, derivatives markets, insurance and asset management sectors.

3. Empirical Strategy

3.1. Hypotheses based on the international co-operation perspective

If implementation records are dominated by the need to internalise externalities and related international cooperation motives, there should be more progress on implementation when this internalisation is more important for financial stability and economic growth. Countries with larger banking industries and systemic banks should undertake more or faster implementation, especially in conjunction with each other, as the global costs of poor regulation and failure would be larger. A more concentrated financial sector also implies more externalities, and, thus, risks for stability and the real economy (fewer "eggs in the basket") so that implementation should be more rigorous.

[7] For more details on these requirements see the FSB monitoring reports (various issues). There are further areas where implementation matters. However, we limit ourselves to these six because they reflect the most important indicators related to banking where also data availability is reasonably good.

In a similar vein, ownership patterns could affect the implementation of financial regulation. Governments may want in particular foreign banks to be well regulated so that the risk of negative externalities from their weakness and from a potential withdrawal from the economy is minimised. A high share of foreign ownership of banking assets may therefore lead to better implementation.

A second set of variables captures the strength of banks and the financial system. The implementation of financial regulation could be a commitment device for countries with weak banks signalling that such countries are "biting the bullet" to strengthen their banks. Less healthy banks (measured through average liquid assets and capital ratios and a z-score of financial institution soundness) are indicative of weaknesses in the financial system. Faster and more rigorous implementation in economies with weaker banks would signal the will to cooperate. We would then expect that bank weakness is associated with more implementation progress.

There are a few specificities and nuances across the estimations for the different areas of financial regulation. For example, the size and systemic relevance of banks and banking systems are expected to be important for all the estimations, they are likely to be particularly relevant for the regulation of recovery and resolution, and resolution (bail-in/transfer/staying) powers. This relates to the Lehmann experience where a disorderly default without adequate preparation and without bail-in had proven to be very costly and contagious.

3.2. Hypotheses based on the special interest perspective

From a political economy and special-interest oriented perspective on financial regulation we would in principle expect a push back against the implementation of (profit-reducing) regulation via lobbying (with the hope for a bailout in the event of a crisis) and through the internalisation of the interests of the banking sector by regulators. We would expect under this more narrow special interest hypothesis that large, concentrated financial industries would in principle try to prevent the implementation of regulation. The presence of G-SIBs should then also lead to lobbying towards delayed or less compliant implementation.

However, there is one important countervailing argument: large, globally operating banks and banking systems may find that well-functioning regulation and level playing field is actually in their interest, given the experience of regulatory arbitrage before and failed banks, forced mergers, managerial dismissals and systemic problems during the global financial crisis. In this case, the interests of global players in financial stability and a level playing field, and the risk that financial costs could overburden the country and lead to a break up and resolution rather than the bailout of banks might dominate the narrow special interest against regulation.

The above mentioned "narrow special interests" effect, therefore, might be mitigated or reversed by "self-interested cooperation" considerations, which we posit is especially the case in countries where G-SIBs and large systems are both present. A positive association between the size of the financial sector and the presence of G-SIBs and progress in implementing reforms may therefore also be explained by the self-interested stance of large players (and not just by "pure" international cooperation motives).

It is difficult to derive clear hypotheses that allow testing the relevance of these opposing explanations. There may be two proxies that go some way. First, an interaction term for whether countries have G-SIBs and large financial sectors together, could allow investigating whether such countries are more likely to lobby for better implementation of international regulation. If this is the case, we would expect that a self-interest motive is more likely than if the size of the financial sector or G-SIB variables are significant on their own, as large banks in a large and interconnected financial sector may have more to lose from the absence of regulation.

Second, the scope of the regulation's applicability is likely to matter. In countries where the regulation only applies to large banks (such as the US), we would expect more concern about global stability/level playing field (and thus more implementation) than in countries where all banks, including the small ones, are affected (such as in the EU). In these latter jurisdictions, smaller bank lobbying may lead to slower implementation due to the influence of their "narrow self-interest".

The effect of significant foreign ownership in the banking system from a special interest perspective is also subject to countervailing influences. Foreign banks per se would want less regulation just as their domestic counterparts. But they may be more interested in lobbying for a level playing field with domestic banks when they are big and play a significant role. This would point to better implementation if there is a strong presence of foreign banks. But the opposite may also hold if foreigners do not expect support in crisis in the host country anyway. Moreover, the legal arrangements of foreign banks (subsidiaries, branches), the concentration and size may matter and interact in a hard to predict manner.

When it comes to indicators of financial sector strength, we expect that banks would want the implementation of regulation to be weak when they are weak and only strengthen when they are sure to meet the standards and are in good overall shape. Lobbying would, hence, lead to the opposite expectation as what we expect from the commitment hypothesis: countries with weaker banking systems would make less progress.

It is also worthwhile discussing the political economy dynamics over time. The global financial crisis is likely to have raised awareness of the local and global externalities of a weak financial industry. However, as the memory of the global financial crisis faded and financial players were weaned from government support and regrouped as lobbying powers (many banks disappeared, were broken up or merged in the crisis, notably in the US but also in other countries), lobbying influences against implementation may have become more important over time.

3.3 Data and data sources

For the six areas of financial regulation, a progress score is computed using the degree of implementation and where available, assessment of compliance with requirements once implemented (see Table 1). Four steps mark the degree of implementation, following the quantitative recording of progress in the BCBS Basel III monitoring reports (BCBS, 2011-2018). In addition, the Regulatory Consistency Assessment Program (RCAP) has assessed countries' progress in implementing the Basel III minimum capital requirements and LCR requirements over the implementation period, which are available in the FSB progress monitoring reports (FSB, 2015-2018). To construct these variables, we assign additional scores to countries using available information in the BCBS reports and are therefore based on BCBS/FSB judgment (see note below Table 1). This scoring system is based on informed judgement and, hence, somewhat arbitrary; in the robustness section we experiment with alternative ways of coding the dependent variable.

Table 1.

Progress in implementing FSB/BCBS requirements

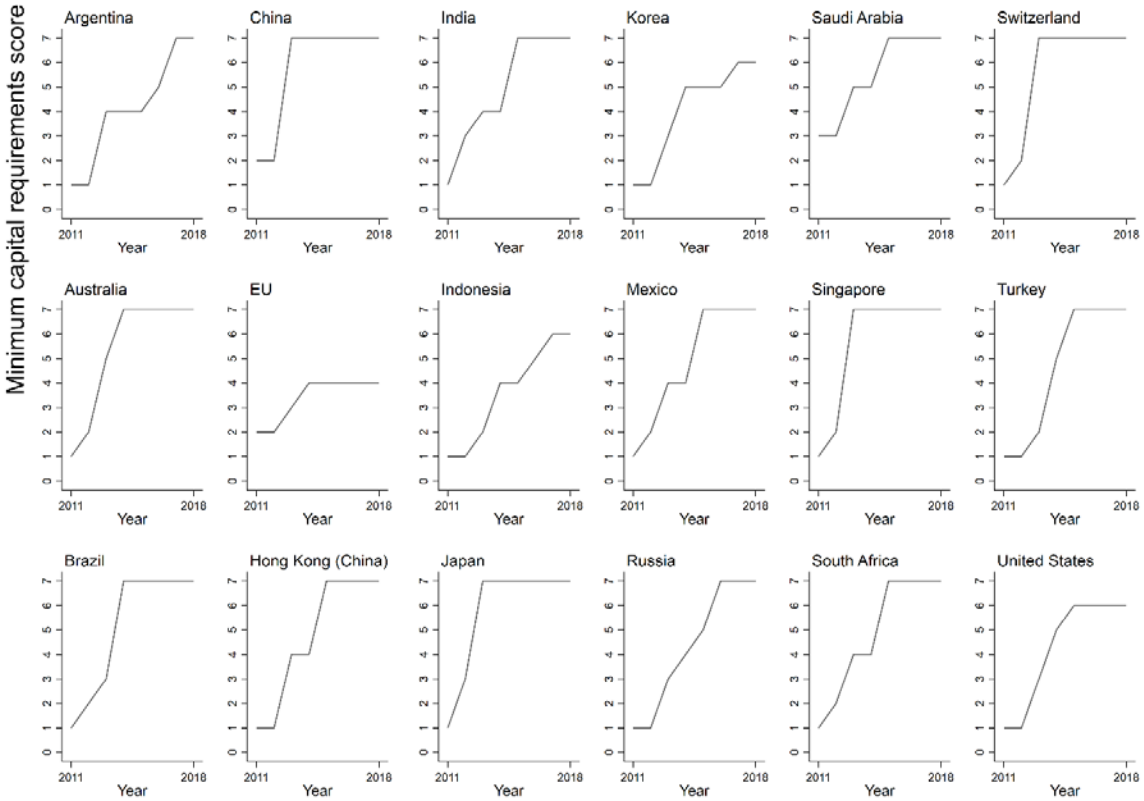
Variable name	Jurisd.	Period	Obs	Mean	Min	Max
Minimum capital requirements	18	2012 - 2018	126	5.3	1.0	7.0
Liquidity Coverage Ratio	18	2012 – 2018	126	4.1	1.0	7.0
Net Stable Funding Ratio	18	2015 – 2018	72	2.1	1.0	4.0
Recovery and resolution planning	18	2015 – 2018	72	2.1	1.0	3.0
Resolution powers for banks	18	2015 – 2018	72	2.1	1.0	3.0
Margin requirements for non-centrally cleared derivatives	18	2016 – 2018	54	2.3	1.0	4.0

Note: Progress in implementing the requirements is recorded as follows: 1: draft regulation not published; 2: draft regulation published; 3: final rule published; 4: final rule in force. For the implementation of the minimum capital requirements and LCR, through the Regulatory Consistency Assessment Programme a jurisdictional assessment is made and we code additional progress as follows: 5: final rule in force, no mention of missing elements; 6: final rule in force and Largely Compliant assessment; 7: final rule in force and Compliant assessment. Jurisdictions include all FSB members, excluding Canada and with one observation for all EU countries combined (including the United Kingdom).

Figure 1 illustrates cross-country progress in implementing the minimum capital requirements. The implementation of minimum capital requirements contains most variation over time and the majority of countries have by now successfully implemented these requirements. Most advances in implementing the minimum capital requirement took place between 2012 and 2014, whereas progress in implementing the other requirements typically occurred somewhat later (see Annex Figure 1), and for some, very little progress has been made.

Figure 1.

Progress in implementing minimum capital requirements



Note: The y-axis denotes progress scores explained in the note under Table 1.

For data on independent variables, we rely heavily on the World Bank's Global Financial Development Database (GFDD), which contains annual data on banking sector characteristics from 1960 to 2017 (see Cihak et al, 2012). This provides independent variables on the size of the banking sector, bank concentration, foreign ownership, capital ratio, liquid assets and bank solvency. For most of these, commonly used indicators are available, such as the share of deposit money bank assets as a share of GDP to measure the size of the banking sector, and the asset concentration of the 5 largest banks to measure concentration. Measuring liquidity poses more challenges, as banks rely on different short and long-term funding models and these may not all be captured by a single indicator. We use a broad indicator of liquid assets as a share of deposits and short-term funding. Bank solvency is captured by a Z-score of financial institution soundness, which compares banking system buffers (capitalization and returns) with the volatility of returns[8]. The list of current G-SIBs is annually updated by the FSB and has been constant for most of the period we assess (for details on these variables see Table 2). The measure of the scope of regulation's applicability is based on information from the BCBS' RCAP country assessments of the implementation of risk-based capital and LCR requirements (BCBS, various years).

[8] The z-score is estimated as: Return on Assets + (Equity/assets) / standard deviation of the Return on Assets.

Table 2.

Summary statistics - independent variables

Variable name	Variable description	Obs	Mean	Std. Dev.	Min	Max
Size of banking sector	Money bank assets to GDP (%)	126	100.8	60.5	4.0	257.0
G-SIB	Presence of a Global Systemically Important Bank	126	0.3	0.4	0.0	1.0
Scope of regulation (C)	Capital requirements apply only to int'l banks	126	0.44	0.49	0.0	1.0
Scope of regulation (L)	Liquidity requirements apply only to int'l banks	126	0.61	0.49	0.0	1.0
Bank concentration	5-Largest bank asset concentration (%)	126	70.5	17.5	35.5	99.4
Foreign ownership	Foreign assets as a share of total bank assets (%)	126	18.8	24.3	0.0	91.6
Capital ratio	Bank capital to asset ratio (%)	126	9.1	2.6	5.0	15.4
Liquid assets	Liquid assets to deposits and short term funding (%)	126	28.6	16.2	6.7	64.6
Bank solvency	Z-score of financial institution soundness	126	15.0	6.1	5.2	29.9
Gov. effectiveness	WGI indicator on government effectiveness	126	0.8	0.8	-0.5	2.2
Change in government	Years with major changes in national government	126	0.3	0.5	0.0	1.0
GDP per capita	GDP per capita, current US$	126	27563	23174	1358	88416
GDP	GDP, current US$, billions	126	3280	4760	229	18700

Note: Missing values for the capital ratio in the year 2017 for China, Italy, South Africa, Sweden, Switzerland and the United Kingdom were imputed with 2016 values. This is also the case for the size of the banking sector in Switzerland for 2017. The same procedure was conducted for Korea, which has a longer missing time series for capital ratio, from 2015 to 2018. These values were computed with the 2014 value.

The treatment of European countries requires special attention. Because the implementation of a large part of the financial regulation agenda has been implemented at the level of the European Union, there is no variation in independent variables in these countries. This additional layer of governance poses a challenge for the interpretation of our hypothesis, because the banking sectors of member states have varying features, and member states may therefore have different interests in advancing regulation. In order to preserve the observation, we construct a hypothetical jurisdiction that is composed of the average characteristics of the (former) EU member states that are part of the FSB: France, Germany, Italy, the Netherlands, Spain and the United Kingdom. For each independent variable, we compute the EU value as an average of these countries' characteristics, as well as their combined GDP. In the robustness section, we conduct a number of tests to ensure that our findings hold with alternative strategies, including by dropping the EU observations, and by including only France, or only Germany, in our models.

We also include a number of control variables that should reflect other influences on regulatory implementation. Greater government effectiveness should make the implementation of bank regulation more speedy and credible. It should also reduce the incentives for lobbying towards regulatory capture as effective regulators are more credible in creating a level playing field. We expect governance quality and competency to be particularly important for bank resolution and resolution powers because resolution of large sophisticated institutions in large financial sectors requires much supervisory competence and capacity.

As an indicator for the quality of government, we use data on government effectiveness from the World Bank's Worldwide Governance Indicators (WGI – see Kaufmann et al. 2010). Some of the WGI's alternative indicators, such as on regulatory quality, are highly correlated (0.98) with government effectiveness in our sample and so we do not test these further in our estimations.

It has been suggested that a change of government may influence compliance with international agreements (Blum and Potrafke, 2019). To explore the idea that a jurisdiction may adapt the speed of implementation, we have constructed a variable that captures any major changes in national government, either in the parliament, presidency or monarchy of the countries in our sample (an overview is available upon request). We make the assumption that a positive or negative impact of a new government would last for two years.

Log GDP per capita and log GDP may control for the fact that bigger and richer countries are more likely to have large financial sectors, greater incentives to regulate them well and a greater ability/sophistication to do so. We would hence expect that all coefficients are positive. By contrast, a change in government might have a negative effect on implementation as it might imply less ownership of the new government regarding international commitments of their predecessors.

3.4 Estimation strategy

A number of considerations guide our empirical strategy. Given the cross-country and intertemporal nature of our analysis and hypotheses, we apply panel data analysis. However, with a final panel dataset of 18 countries for a total of 7 years, our limited sample size will be a constraining factor when applying a fixed effects model. There is also a more fundamental reason why a fixed effects estimation is not our preferred choice. Some of our key explanatory variables of interest, such as the presence of G-SIBs, do not vary over time. Fixed effects models do not allow any inference to be made about such time invariant differences between jurisdictions, including whether or not these differences are significant. We therefore follow an approach originally presented by Mundlak (1978) and recently described by Allison (2009) and Bell et al. (2015), among others, that proposes to explicitly model the higher level variance of the cross-country component (between-effect) and the time varying component (within-effect). In addition to allowing for time invariant variables, this "within-between" model allows to explicitly identify and model the variation in implementation progress that is explained by characteristics of countries' banking systems and by variations in characteristics over time.

In the model we employ, the "within" and "between" effects are estimated simultaneously:

$$y_{it} = \beta_0 + \beta_1 w_{it} + \beta_2 z_i + (u_i + e_{it})$$

Here, y_{it} is the individual dependent variable representing progress in implementing financial requirements. w_{it}, composed of $x_{it} - \overline{x_i}$, is a series of time-varying independent variables with coefficient β_1, reflecting "within"-effects. These include the size and concentration of the banking sector, capital and liquidity ratios, bank solvency, and government effectiveness. All time-varying components of the model are specified with a one year lag, allowing for time for the transmission of changes in the banking sector characteristics to resulting policy implementation.

The term z_i with coefficient β_2 represents the time-invariant component of these variables, reflecting "between" or cross-country effects. These include a series of variables $\overline{x_i}$, the mean over time of the variables x_{it}. In addition, z_i includes covariates that are fully invariant, notably the presence of a G-SIB. In our model, we treat the variables of GDP and GDP per capita as time invariant as their inclusion is intended to control for fixed differences between countries. Because of data limitations, we only consider the higher level, cross-country variance of foreign ownership.

Further, u_i and e_{it} account for residuals of the higher level entities and the lower level, year-specific variation separately, ensuring that the standard errors are correct (following Bell et al., 2015). The model assumes independence of the main regressor w_{it}, in contrast to a fixed effects model, which would allow for correlation between the error term and the observed predictors. Random effects models do not allow for correlation between the error term and the predictors and are therefore prone to omitted variable bias, unless the model is correctly specified. However, our model mitigates potential endogeneity and omitted variable concerns of random effects models by explicitly modelling the higher-level variance. Any covariation between regressors and omitted variables that may otherwise be cause for concern in these models is now accounted for by z_i. The time varying variables are introduced with a one year lag in order to address possible reverse causality.

It is important to be clear about the interpretation of the "between" and the "within" effects of our model. We have stated in the previous section that the former measure the time invariant, between-

country effects, whereas the latter measure time varying effects. They measure, for example, whether a growing or shrinking financial sector or decreasing or increasing solvency is associated with progress. For the purpose of our study, we allot most importance to the "between"-country differences, as these (largely pre-existing) differences between financial systems are likely to explain a large part of the implementation record. However, the time varying effects may also play a role. A growing banking sector may be associated with a greater interest of the banking sector in the implementation of regulation, or the opposite. Similarly, the status of bank's health can be reflected by both the level, and the change. Although we believe the level is key, the change also has the potential to exert its influence on the implementation dynamics in a country.

We test for potential multicollinearity among our independent variables by computing variance inflation factors. This does not present major concerns among our main set of variables of interest (the largest quotient being for the G-SIB variable at 2.89). When including control variables, multicollinearity risks increase, with the quotient for government effectiveness rising to 11.00, which is high. Indeed, the government effectiveness variable is strongly correlated with GDP per capita and also with the size of the banking sector (Annex Table 3 contains an overview of correlations), which warrants care. We explicitly estimate the model with and without control variables, and, as will be seen later, the results prove relatively robust to these different specifications. There is a degree of heteroscedasticity and autocorrelation in the models. Because our dataset is short relative to the number of groups (N > T), Huber-White standard errors should correct for both of these sufficiently. We follow this approach because it is more efficient than alternative approaches to dealing with autocorrelation, which would better suit longer time series.

4. Results

4.1 Minimum capital requirements

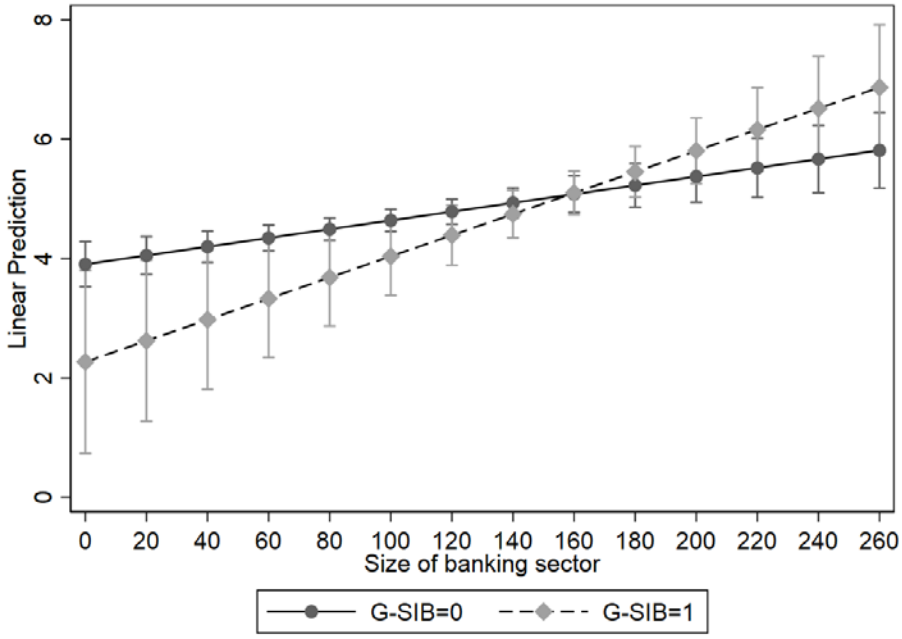
The size of the banking sector and the presence of a G-SIB are highly significant variables in explaining the degree of implementation of the Basel III minimum capital requirements (Table 3). A larger banking sector is associated with faster and better implementation, as shown by the coefficients of the "between" effects of the size of the banking sector. This relationship is particularly pronounced in economies with G-SIBs, as suggested by the positive sign on the interaction variable and as illustrated in the marginal effects plot in Figure 2. The figure also shows that in jurisdictions with relatively small financial sectors (as a share of GDP), the presence of a G-SIB is associated with less progress.

In principle, a positive sign on the size of the financial sector could be indicative of cross-country cooperative motives, as countries with a larger industry take a proactive stance in implementing reforms. At the same time, the positive sign on the interaction between the size of the banking sector and the G-SIB variable provides some evidence for the idea that large players saw that benefits of levelling the playing field and internalising potential externalities via more capital outweigh the potentially higher (short-term) profitability associated with delaying implementation. We thus find evidence countering the narrow special interest hypothesis and in favour of cooperation by large players. But while self-interested motives seem important in explaining cooperation, we cannot draw definite conclusions for which of the two motives for cooperation may be dominant.

As for the time varying effects, we find that countries with a growing banking sector make more progress, but that this effect largely disappears in countries with G-SIBs (as shown by the interaction of the "within" effects variable). In those countries without G-SIBs, this finding may then be indicative of cooperative motives, as the growing importance of the financial sector makes the implementation of the regulation agenda increasingly relevant. Conversely, a growing banking sector may also be a sign of improving bank health, and in this interpretation, the positive relationship may be reflective of greater ease of implementation when the sector is strong.

Figure 2. Marginal effects plot for the size of the banking sector and the presence of G-SIBs

Predictive margins of G-SIB with 95% Confidence Intervals



Note: This figure is based on estimation (2) of Table 3. The smallest banking sector in the sample in terms of banking assets as a share of GDP is 4%, whereas the largest is 257% of GDP.

We also find that the scope of the regulation's applicability matters. Progress was higher in countries where the regulatory requirements applied to internationally active banks only versus those where all banks were affected. This provides additional support for the idea that large, global players acted out of their own interest for a level playing field, and it is also consistent with the idea that it is particularly small banks that lobby against implementation out of more narrow special interest motives.

Bank concentration displays negative "between" effects when controlling for country characteristics. This suggests that concentrated (and thus better organised) banking industries may have been more successful in lobbying against speedy implementation of capital standards. The findings also suggest less implementation in countries with a large share of foreign asset ownership. This could be explained by more leverage of foreigners lobbying against implementation. However, this contradicts the interest of foreigners in a level playing field and more analysis seems needed (e.g. as to the size and type of foreign presence; branches versus subsidiaries, or GSIBs versus non-GSIBs) to substantiate this claim.

As regards indicators of banking strength, the results on the capital ratio weakly support the commitment hypothesis, as countries with a lower capital ratio achieve more progress (albeit only in estimation (2)). At the same time, there is modest support for the claim that implementation was fastest where it was the easiest as strong, solvent banks might have lobbied less against implementation. This is confirmed both by the between effects and also to a weak extent over time. This finding is corroborated by the earlier finding on the within effects of the size of the banking sector variable with growing (and thus, supposedly, increasingly healthy) banking sectors being more compliant.

Table 3.

Estimation results – progress in implementing Basel III minimum capital requirements

		Random effects		Fixed effects	
		(1)	(2)	(3)	(4)
Externalities and lobbying incentives					
Size of banking sector	between	0.004	0.007***		
		(0.00)	(0.00)		
	within	0.136***	0.126***	0.135***	0.126***
		(0.02)	(0.03)	(0.02)	(0.03)
Presence of a G-SIB	between	-4.461***	-1.745**		
		(0.78)	(0.88)		
Presence of a G-SIB * Size of banking sector	between	0.028***	0.010**		
		(0.00)	(0.00)		
	within	-0.119**	-0.100	-0.116**	-0.101*
		(0.06)	(0.07)	(0.05)	(0.06)
Scope of regulations' applicability (int'l banks)	between	0.201	0.468***		
		(0.28)	(0.17)		
Bank concentration	between	-0.002	-0.017**		
		(0.01)	(0.01)		
	within	-0.017	-0.028	-0.006	-0.022
		(0.09)	(0.09)	(0.08)	(0.08)
Foreign ownership of banking assets	between	-0.010***	-0.010***		
		(0.00)	(0.00)		
Commitment device and lobbying incentives					
Capital ratio	between	0.071	-0.174***		
		(0.06)	(0.07)		
	within	0.379	0.292	0.355	0.292
		(0.29)	(0.29)	(0.30)	(0.29)
Bank solvency	between	0.106***	0.123***		
		(0.02)	(0.01)		
	within	0.234	0.148	0.252	0.145
		(0.20)	(0.20)	(0.20)	(0.19)
Control variables					
Government effectiveness	between		-1.361***		
			(0.29)		
	within		0.474		0.400
			(1.91)		(1.90)
Change of government	within		1.385***		1.387***
			(0.48)		(0.44)
Log GDP per capita	between		0.684***		
			(0.13)		
Log GDP	between		-0.470***		
			(0.17)		
Constant		2.757***	12.970**	4.731***	4.720***
		(1.03)	(5.07)	(0.19)	(0.20)
Number of observations		126	126	126	126
Number of groups		18	18	18	18
R^2 (between)		0.800	0.945	0.007	0.012
R^2 (within)		0.364	0.426	0.364	0.426

Standard errors in parentheses. *=p<0.10, **=p<0.05, ***=p<0.01

Finally, government effectiveness shows a negative correlation with implementation across countries. Log GDP and log GDP per capita show a significant positive correlation with implementation. It is well possible that the strong collinearity between the quality of governance and GDP per capita confounds their effects. Indeed, when including only either government effectiveness, or GDP per capita, both results are insignificant.

Contrary to our expectation, a change in government is associated with a renewed positive impetus on implementation. A potential explanation could be that, in this period, governments seen too close to

their banks were more likely to be voted out of office while candidates more hostile to them were more likely to be voted in[9].

When looking at the overall model fit, the random effects model shows a good fit, notably for the between country variation. The findings also show that the fixed effects model is overall consistent with the random effects coefficients as regards the time-varying variation.

4.2 Liquidity Coverage and Net Stable Funding Ratios

There is a significant negative effect of the size of the banking system on progress in implementing the Liquidity Coverage Ratio (LCR). In countries with G-SIBs, this effect is cancelled out as reflected by the interaction term. Special interests may, hence, delay implementation except when the financial sector is large and G-SIBs are present (and, thus, coordination and level playing field interests are stronger). However, the significance of the results is not very robust to the introduction of our set of controls.

Moreover, and similar to the minimum capital requirements, the within effects of the size of the banking sector are positive, which suggests progress in growing (healthy) banking sectors. At the same time, we also find the same negative within effects when G-SIBs are present (in the interaction term), meaning that this finding only holds in economies without G-SIBs.

Bank concentration shows a positive coefficient. This is consistent with the argument that liquidity is particularly important in highly concentrated systems where consumers do not have much choice in crunch times, and that concentrated jurisdictions take a cooperative stance in this regard. “Within” effects, however, are negative, pointing to less implementation in sectors that became more concentrated over time (and thus lobbying may have become more important as the distance to the crisis increased). Foreign ownership shows a positive correlation with the implementation of liquidity requirements, as liquidity may be most in the interest of foreign owners and domestic regulators to keep intermediation going.

Further results relate to the commitment hypothesis. Countries where banks held less liquidity made significantly more progress in implementing the short-term liquidity requirement, in line with this hypothesis. Bank solvency shows no significant between effects but consistently positive “within” effects, pointing to more implementation following better solvency indicators. This to some extent counters the commitment hypothesis.

As regards the net stable funding ratio (NSFR), the findings are not very conclusive (Table 5, Column 1). While a larger financial sector is correlated with less implementation, a more concentrated sector implies more compliance. These findings work in opposite directions as to the influence of special interests versus international cooperation. A negative correlation between liquid assets and implementation of the NSFR is in line with the commitment hypothesis where countries with weaker banks move faster. A number of variables, however, are not significant.

[9] France in 2012 elected as president a candidate who ran on the motto “Mon ennemi, c’est la finance”.

Table 4.

Estimation results – progress in implementing the Liquidity Coverage Ratio

		Random effects		Fixed effects	
		(1)	(2)	(3)	(4)
Externalities and lobbying incentives					
Size of banking sector	between	-0.004	0.003		
		(0.00)	(0.00)		
	within	0.177***	0.168***	0.179***	0.170***
		(0.02)	(0.03)	(0.02)	(0.03)
Presence of a G-SIB	between	-0.630	1.114		
		(0.61)	(0.82)		
Presence of a G-SIB * Size of banking sector	between	0.005	-0.004		
		(0.00)	(0.00)		
	within	-0.202**	-0.190**	-0.204**	-0.195**
		(0.09)	(0.09)	(0.09)	(0.09)
Scope of regulations (int'l banks)	between	-0.216	-0.388		
		(0.27)	(0.27)		
Bank concentration	between	0.016**	0.009		
		(0.01)	(0.01)		
	within	-0.103*	-0.098	-0.110*	-0.104
		(0.06)	(0.07)	(0.06)	(0.07)
Foreign ownership of banking assets	between	0.009*	0.003		
		(0.00)	(0.00)		
Commitment device and lobbying incentives					
Liquid assets	between	-0.024***	-0.026***		
		(0.01)	(0.01)		
	within	0.124**	0.118**	0.125**	0.119**
		(0.06)	(0.05)	(0.05)	(0.05)
Bank solvency	between	0.018	0.031		
		(0.03)	(0.02)		
	within	0.617***	0.493***	0.621***	0.496***
		(0.18)	(0.14)	(0.18)	(0.14)
Control variables					
Government effectiveness	between		-0.811***		
			(0.31)		
	within		2.408		2.328
			(2.26)		(2.25)
Change of government	within		0.532		0.507
			(0.69)		(0.65)
Log GDP per capita	between		0.293*		
			(0.17)		
Log GDP	between		-0.309*		
			(0.18)		
Constant		3.087***	8.997*	3.606***	3.602***
		(0.72)	(5.12)	(0.02)	(0.04)
Number of observations		126	126	126	126
Number of groups		18	18	18	18
R^2 (between)		0.447	0.683	0.018	0.000
R^2 (within)		0.460	0.478	0.460	0.478

Standard errors in parentheses. *=p<0.10, **=p<0.05, ***=p<0.01. All within-variables contain a one-year lag.

4.3 Resolution and recovery requirements and resolution powers

Resolution requirements, including the recovery and resolution planning requirements and the temporary stay, bail-in and transfer powers for bank resolution (resolution powers) aim to limit fiscal costs, disturbances to the financing of the domestic economy and the risk of systemic, cross-country spillovers when banks get into trouble. They are particularly important in countries with large, concentrated banking systems and especially those with G-SIBs. Moreover, this regulation requires higher sophistication of the governing authorities.

Indeed, in both estimations (Columns 2 and 3) in Table 5, the G-SIB variable is highly significant, in line with stronger implementation in the presence of such global players (Column 2, Table 5). Moreover, a high share of foreign ownership displays the same positive correlation. This is in line with the hypothesis that domestic supervisors want to have a good resolution regime in place when foreign banks are important and foreign banks as international players also see this in their interest. By contrast, the size of the banking sector shows a marginally significant negative coefficient.

Increasing bank concentration as represented by the within effects are also associated with progress in implementing the recovery and resolution planning requirements, in line with the cooperation hypotheses and the need for better internalising externalities when the financial sector becomes more concentrated over time.

Indicators of banking sector strength do not appear to matter for regulatory implementation in this domain. Amongst the banking strength variables, only bank solvency shows a significant negative effect in the resolution powers estimation (3). This is in line with the commitment hypothesis where lesser bank health implies more progress with implementation of resolution powers. Here, the between variation for governance quality shows a significant positive coefficient, in line with the competency hypothesis.

4.4 Margin requirements for non-centrally cleared derivatives

Our final estimation looks at the potential determinants of the implementation record regarding OTC derivatives clearing and, in particular, margin requirements. We find positive effects regarding size of the financial system and the presence of G-SIBs in line with the international co-operation and large players' hypotheses. By contrast, negative "within" effects for the G-SIB-size interaction term point to possible (self-interested) cooperative motives in countries with G-SIBs and shrinking banking sectors, where G-SIB push for implementation when the banking sector is in a relatively weakening shape. We also find positive effects for the capital ratio over time, signalling better implementation where banks are becoming stronger. The panel size, however, is even smaller than for the other equations. Hence, there appears to be a need for interpreting the results very prudently and for further work, particularly in this regulatory domain.

4.5 Robustness

There are a number of ways in which we attempt to make sure our results are robust by challenging some of our assumptions. We apply robustness tests to all equations, but report specifically on the estimations for minimum capital requirements in Annex Table 4, where we repeat estimations (1,2) from Table 3, first using an ordered logistic model, rather than least squares, and second, by testing an alternative specification of the dependent variable. The latter test in estimations (3, 4) considers only the compliance rating that countries have received during the jurisdictional assessments on the implementation of the minimum capital requirement, rather than the intermediate progress updates provided in the BCBS and FSB reports. In both of these, our main results on the role of the size of the banking sector, G-SIB presence, bank concentration, foreign assets and bank solvency largely hold, although the interaction between the size of the banking sector and the presence of G-SIBs and the variable representing the scope of regulations are not significant in all estimations. These latter differences could be explained by the more limited variation of the alternative variable.

Table 5

Estimation results – progress in implementing NSFR, Resolution and Recovery requirements, Resolution Powers, Margin requirements

		Net Stable Funding Ratio (1)	Recovery and Resolution (2)	Resolution Powers (3)	Margin req. (4)
Externalities and lobbying incentives					
Size of banking sector	between	-0.006*	-0.007**	-0.004*	0.007***
		(0.00)	(0.00)	(0.00)	(0.00)
	within	0.020	0.020	-0.002	0.049**
		(0.02)	(0.01)	(0.01)	(0.02)
Presence of a G-SIB	between	0.974	1.430***	0.684*	2.482***
		(1.56)	(0.51)	(0.37)	(0.90)
Presence of a G-SIB * Size of banking sector	between	-0.006			-0.012
		(0.01)			(0.01)
	within	-0.018			-0.109***
		(0.05)			(0.03)
Bank concentration	between	0.021**	-0.001	0.012	0.012
		(0.01)	(0.01)	(0.01)	(0.01)
	within	0.024	0.031**	-0.007	-0.023
		(0.05)	(0.01)	(0.01)	(0.02)
Foreign ownership of banking assets	between	-0.006	0.020***	0.011***	
		(0.00)	(0.01)	(0.00)	
Commitment device and lobbying incentives					
Liquid assets	between	-0.023***			
		(0.01)			
	within	-0.026			
		(0.03)			
Capital ratio	between		-0.092	0.039	-0.035
			(0.09)	(0.05)	(0.14)
	within		0.114	0.006	0.440**
			(0.15)	(0.07)	(0.20)
Bank solvency	between	0.013	0.017	-0.047***	
		(0.03)	(0.03)	(0.02)	
	within	0.321**	0.054	0.044	
		(0.14)	(0.07)	(0.04)	
Country controls					
Included		Yes	Yes	Yes	No
Constant		11.417**	2.235	-3.786	0.397
		(5.53)	(4.63)	(2.40)	(2.27)
Number of observations		72	72	72	54
Number of groups		18	18	18	18
R^2 (between)		0.848	0.764	0.866	0.681
R^2 (within)		0.129	0.151	0.044	0.059

Standard errors in parentheses. *=p<0.10, **=p<0.05, ***=p<0.01. In order to preserve degrees of freedom, we deliberately choose a more parsimonious regression for equation (4) on margin requirements for OTC derivatives.

As an additional robustness check, we consider the drivers of early implementation and compliance, in the years 2012 to 2015. This is the period when most progress was made in implementing the risk-based capital requirements. In these regressions, identical to estimations (1,2) from Table 3, we find an overall similar pattern in comparison to our main findings on minimum capital requirements. The

coefficients for the size of the banking sector and the presence of a G-SIB are comparable. In estimation (2) which includes control variables, however, the interaction term between size and G-SIB loses its significance. This could be explained by the smaller sample size of this estimation. Alternatively, it is possible that the difference between these two estimations reflects late progress by countries with G-SIBs and large banking sectors, which could signal that in these economies, strong banks may have lobbied against early implementation. This is not inconsistent with a self-interest dominating approach by large banks, who may be in favour of limiting systemic risks while wanting to avoid the competitiveness costs related to being a first-mover.

As mentioned, the construction of an observation for the European Union relies on the assumption that implementation in the European Union is influenced by the average banking sector characteristics of the European FSB members in the same way as other jurisdictions, while there is substantial evidence that there are competing interests because of the heterogeneity of the banking systems (Spendzharova, 2014). For this reason, we repeat our minimum capital requirement estimations first by including only France, and only Germany in the dataset, in lieu of an all-encompassing EU observation, and second, by eliminating the EU observations altogether. The significance and sign of all key independent variables of interest are maintained. The only variable that loses its significance in these three regressions is banking concentration, which was a weak finding to begin with.

5. Conclusion

The study analyses the implementation of key regulatory provisions for banking, notably capital, liquidity and long-term funding, resolution and recovery planning and resolution powers, and over-the-counter (OTC) derivatives clearance. It finds that large players, i.e. jurisdictions with large banking sectors and big, internationally operating banks, have made more progress in implementing the Basel III agenda on international financial regulation. These results suggest that cooperative motives of internalising externalities, creating a level playing field and preserving financial stability play a role in explaining the implementation record. This is the case in particular for the risk-based capital requirements as well as for the requirements on OTC derivatives and recovery and resolution requirements.

We find evidence that this cooperative behaviour may be driven by the self-interest of global players as the positive record is particularly strong in countries where large banking sectors and big banks are both present, and where regulation only applies to large players. The empirical strategy does not allow us to unambiguously determine whether these jurisdictions cooperate for the common interest or due to the self-interest of domestic but globally operating industries. However, the fact that countries with large banking industries and G-SIBs and those where the rules only apply to big banks have a better implementation record suggests that cooperation due to the self-interest of the (global) players may be an important motive while smaller banks seem to promote their narrower self interest.

Sectoral concentration, bank health and the share of foreign ownership show more mixed signals as regards their impact on implementation. Bank concentration and foreign ownership are negatively associated with progress in implementing capital requirements, which does point to some special interest effects in implementing capital requirements. However, these findings are not consistent across the dependent variables, with countries with higher shares of foreign ownership making more progress in implementing the recovery and resolution requirements.

Countries with lower shares of liquid assets made significantly more progress in implementing the LCR requirements, which points to a potential cooperative stance of countries with liquidity issues. More concentrated banking sectors also made more progress in implementing these requirements, pointing to a cooperative lobbying effect (although this seems to have declined over time).

Our results are consistent with the literature that emphasises the benefits of regulation and the adverse effects of regulatory capture, but it also shows that in practice, these dynamics may be more nuanced and international and industry interests may have become more aligned. The findings are based on a limited set of countries, a rather short timespan and are rooted in a number of assumptions about the construction of the dependent variables and the empirical strategy more broadly. Hence, these results are indicative and need to be interpreted with care, but they may provide a good first stab at the issue and a starting point for further research. This includes further investigation on the motives behind cooperation, on the role of foreign banks and the role of different institutional setups across countries, and the role that countries played in the design of the Basel III package which may have affected their willingness to implement.

More generally, and beyond this study, there are still major challenges for a well-regulated, stable financial system in the future. While there has been considerable progress in banking, the record is much patchier as regards market-based finance and much remains to be done to better understand and regulate risks from that sector (FSB, 2018). This became all the more apparent in the COVID-19 crisis in spring 2020 when central banks had to underpin the functioning of markets as illiquid asset managers risked to create havoc. The potential for moral hazard and "blackmail" has, hence, not disappeared but perhaps only shifted to the non-banking part of the sector.

Moreover, the implementation of sound regulation is not assured for the future and back-sliding may happen. The chance of nationally-motivated bailouts in banking remains high. National policy makers tend to have an incentive to stretch the rules and prevent full bail-ins and resolutions for fear of instability, contagion and political costs[10]. Vigilance will be needed to continue implementing regulatory commitments.

[10] Donnelly and Asimakopoulos (2019) describe the case of three Italian banks where according to the authors, rules were bent/broken in 2017/18 for exactly these reasons.

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Annex Table 1.

Overview of literature on the political economy of financial regulation and international organisations

Literature on the political economy of financial regulation and international organisations	
Dreher and Lang (2016)	Political economy of international organisations: club theory, ensure time consistency of intl. deals, package deals across countries; role as scapegoats, Susceptibility to interest group capture.
Vaubel (2004, 2006)	Political economy of international organisations.
Theory/conceptual frameworks and empirics	
Amri and Kocher (2009)	Higher supervisory quality reduces risk of banking crisis
Bemelech and Moskowitz (2010)	Historical evidence on capture in 19th century
Calomiris and Haber (2014)	History of financial regulation, outcome of bargaining
Dagher (2018)	Pro-cyclical regulatory cycles due to special interest lobbying and post crisis rule erosion
Hardy (2006)	Model on regulatory capture in the banking sector
Holthausen and Ronde (2004)	Theoretical political economy model of regulation and supervision of bank resolution
Igan D. and T. Lambert (2019)	Lobbying and regulatory capture pre-crisis, evidence for US
Laffont and Tirole (1991)	Expansion of the regulatory capture theory
Lall (2012)	Basel II was captured, industry with first mover advantage, Basel III with G20 better, recapture as of 2010
Monticelli (2019)	Survey of literature, also international rule setting, G formats
Stigler (1971)	Early theory on regulatory capture
Wah Hlaing and Kainaka (2018)	Financial crisis stokes policy reform but not necessarily strengthens financial regulation
Young (2012)	Capture is overstated, partly no success of lobbies post crisis
International rule setting	
Arner and Taylor (2009)	Soft law via expansion of FSB mandate strengthened supervision9
Farrell and Neumann (2015)	Global firms supported international rule-making
Howarth and Quaglia (2013)	Basel III and CRD IV features influenced by national financial sector of France, UK and Germany
Monticelli (2019)	Intl. firms plus natl. specificities for implementation, enforcement, adaptability led to intl. soft law
Spendzharova (2014)	Regulatory preferences for centralisation in EMU depend on foreign ownership and domestic bank internationalisation
Quaglia (2017a)	International firms facilitated international dispute settlement
Quaglia (2017b)	Dominant banks and competence caused US and UK dominance
Role of G formats (G7, G8, G20) and FSB	
G. Cheng (2016)	Role of G20 as global broker for strengthened safety nets
Gstoehl (2007)	G8 + IOs, network delegates negotiation, especially where dominant share
Monticelli (2019)	FSB new element in global financial governance
Effects of implementation	
Boissay F. et. al (2019)	Meta study on evidence of post-crisis financial regulation (80 studies 2013-18)
FSB (2018a, 2018b, 2019)	Effect on infrastructure finance, on OTC derivatives and on SMEs
Knight M. (2018)	International banking rules shifted risks to less regulated non-bank sector
Schuknecht (2019)	Fiscal risk shifted to market based finance

Annex Table 2.

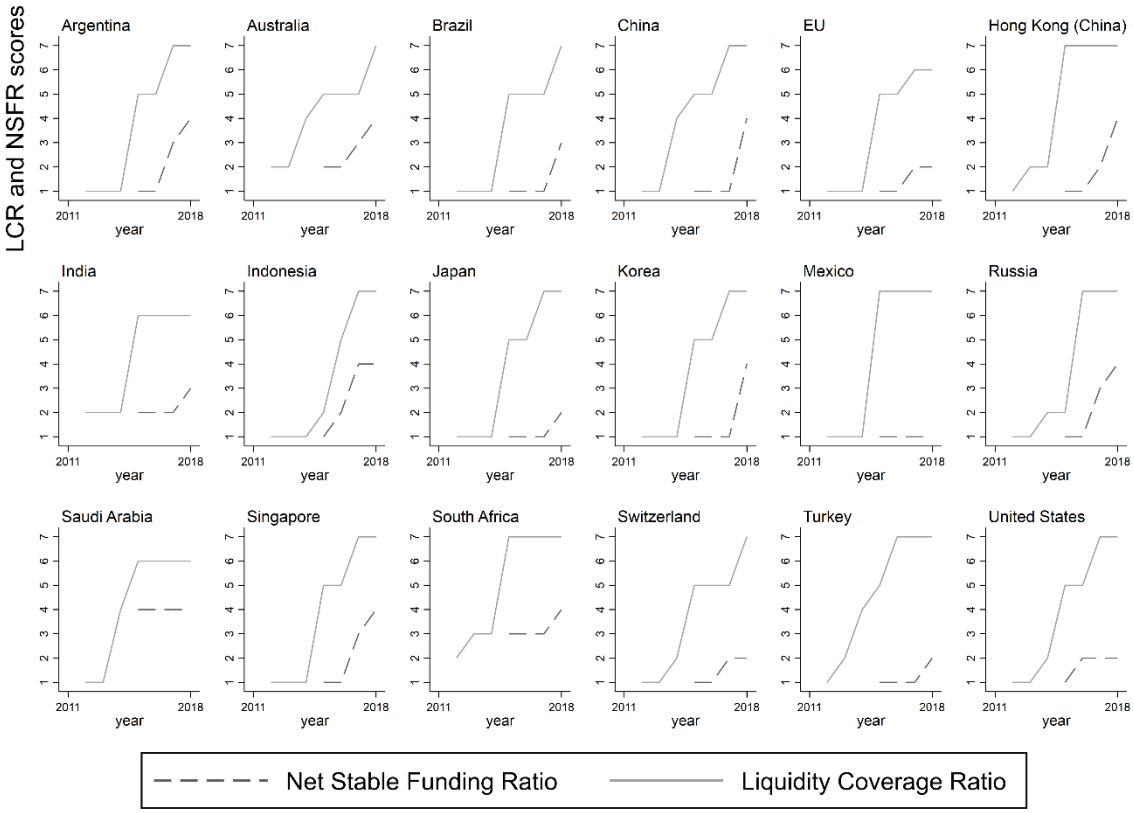
Compliance with FSB and BCBS Financial Regulation Agenda: Hypotheses and Variables

Dependent variables				
1. Resilience of banks	Minimum capital requirements			
2. Short term funding	Liquidity Coverage Ratio			
3. Long term funding	Net Stable Funding Ratio			
4. Recovery and Resolution planning	Recovery & resolution planning requirements			
5. Resolution powers	Temporary stay/bail-in/transfer powers for banks			
6. Derivatives markets	Margin requirements for non-centrally cleared derivatives			
Independent variables		**Expected sign**		
		International cooperation hypothesis	**Special interest hypothesis**	
1. Size of financial industry and externalities		Common interest cooperation	Self-interested cooperation driven by large players	Narrow special interests
Size of the banking sector	Banking assets/GDP	(+)	(+)	(-)
Presence of systemic institution	G-SIB presence	(+)	(+)	(-)
	G-SIB presence interacted with size of the banking sector	(0)	(+)	(-)
Scope of applicability of regulation	Regulation applies to internationally active banks only	(0)	(+)	(-) Large banks (+) Small banks
Concentration of banking system	Share of top (5) banks/total banking assets	(+)	(+)	(-)
Foreign ownership of banks	Share of bank assets with foreign ownership	(+)	(+)	(-)
2. Financial health of banks		Commitment device	Special interest incentives	
	Capital ratio	(-)	(+)	
	Liquidity ratio	(-)	(+)	
	Bank solvency	(-)	(+)	
3. *Control variables*		Implementation capacity	Special interest incentives	
	Governance quality	(+)	(-)	
	GDP per capita	(+)	(-)	
	GDP	(+)	(-)	
		Public support for regulation	Decreased ownership over commitments	
	Change of government	(+)	(-)	

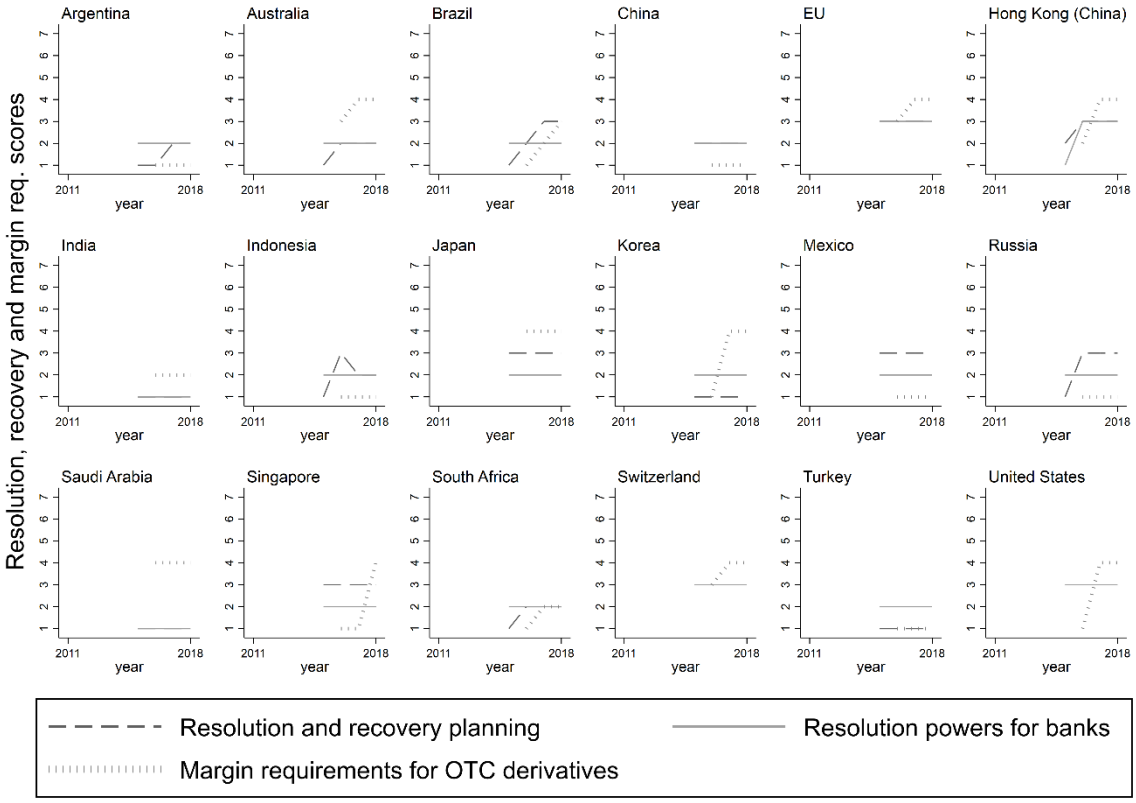
Annex Figure 1.

Dependent variables: progress in implementation of requirements

(a) Liquidity Coverage Ratio and Net Stable Funding Ratio



(b) Resolution, recovery and derivatives requirements



Annex Table 3.

Correlation matrix of independent variables

	Size financial system	G-SIB	Scope (Capital req.)	Scope (Liquidity req.)	Bank concentration	Foreign ownership	Capital ratio	Liquid assets	Bank solvency	Government effectiveness	Change in government	GDP
G-SIB	0.37											
Scope (Capital req.)	0.33	0.19										
Scope (Liquidity req.)	0.32	0.24	0.71									
Bank concentration	-0.61	-0.42	-0.01	0.11								
Foreign ownership	-0.01	0.15	-0.02	-0.05	-0.06							
Capital ratio	0.21	0.42	0.10	0.11	-0.11	-0.21						
Liquid assets	0.39	-0.12	-0.46	0.08	-0.34	0.16	0.10					
Bank solvency	0.13	-0.32	0.40	0.23	0.22	0.23	0.00	0.01				
Government effectiveness	0.74	0.43	0.39	0.32	-0.48	-0.04	0.42	0.42	0.00			
Change in government	0.09	0.06	0.14	0.05	0.01	-0.10	0.19	0.02	0.05	0.14		
GDP	0.05	0.75	0.21	0.06	-0.13	-0.03	0.53	-0.32	-0.21	0.21	0.19	
GDP per capita	0.57	0.47	0.30	0.42	-0.40	0.17	0.35	0.40	-0.14	0.88	0.11	0.20

Annex Table 4.

Robust regression of minimum capital requirements using alternative coding of dependent variable

		Ordered logistics regression		Alternative minimum capital requirement variable	
		(1)	(2)	(3)	(4)
Externalities and lobbying incentives					
Size of banking sector	between	0.004	0.009	0.002	0.004**
		(0.01)	(0.01)	(0.00)	(0.00)
	within	0.160***	0.175***	0.045***	0.041***
		(0.03)	(0.03)	(0.01)	(0.01)
Presence of a G-SIB	between	-5.342***	-1.733	-2.612***	-0.632
		(1.67)	(3.15)	(0.65)	(0.73)
Presence of a G-SIB * Size of banking sector	between	0.034***	0.012	0.017***	0.005
		(0.01)	(0.02)	(0.00)	(0.00)
	within	-0.134**	-0.109*	-0.033	-0.023
		(0.05)	(0.06)	(0.02)	(0.03)
Scope of regulations' applicability (int'l banks)	between	0.291	1.108*	0.071	0.257
		(0.49)	(0.63)	(0.19)	(0.17)
Bank concentration	between	0.001	-0.028	-0.003	-0.013**
		(0.01)	(0.02)	(0.00)	(0.01)
	within	-0.048	-0.056	0.005	0.005
		(0.07)	(0.07)	(0.03)	(0.03)
Foreign ownership of banking assets	between	-0.014	-0.019*	-0.004	-0.005**
		(0.01)	(0.01)	(0.00)	(0.00)
Commitment device and lobbying incentives					
Capital ratio	between	0.128	-0.311	0.028	-0.121*
		(0.13)	(0.23)	(0.05)	(0.07)
	within	0.320	0.348	0.167	0.128
		(0.31)	(0.31)	(0.11)	(0.13)
Bank solvency	between	0.130***	0.159***	0.059***	0.067***
		(0.04)	(0.05)	(0.02)	(0.01)
	within	0.252	0.179	0.074	0.036
		(0.19)	(0.20)	(0.08)	(0.08)
Control variables					
Government effectiveness	between		-2.599**		-0.770***
			(1.02)		(0.26)
	within		1.089		0.769
			(1.76)		(1.04)
Change of government	within		1.541***		0.377
			(0.48)		(0.27)
Log GDP per capita	between		1.325**		0.350***
			(0.52)		(0.12)
Log GDP	between		-0.768		-0.363**
			(0.48)		(0.15)
Constant				-0.095	9.045**
				(0.71)	(4.53)
Number of observations		126	126	126	126
Number of groups		18	18	18	18
R^2 (between)				0.697	0.825
R^2 (within)				0.291	0.326

Standard errors in parentheses. *=p<0.10, **=p<0.05, ***=p<0.01