

Regulatory Corridors

The Reasons Behind Complexity in International and European
Banking Regulation Accords

Frederik Traut

Dissertation submitted to the Hertie School in partial fulfilment of the
requirements for the degree of Doctor rerum politicarum (Dr. rer. pol.) in
the Doctoral Programme in Governance

Berlin, 2021

Advisors

First Advisor

Prof. Mark Hallerberg, PhD
Hertie School, Berlin

Second Advisor

Prof. Thorsten Beck, PhD
Florence School of Banking & Finance; European University Institute, Florence
The Business School (formerly Cass); City, University of London

Third Advisor

Prof. Lucia Quaglia, DPhil
University of Bologna

Summary

The international banking regulation regime is complex. This complexity leaves room for regulatory arbitrage and boosts administrative burdens, which reduces its mitigating effect on financial instability. This book addresses the question on why states agree on such a potentially inefficient regime. First, it evaluates research on international banking regulation negotiations, which either neglect complexity or offer insufficient functionalist regulatory capture arguments for its emergence.

Second, it proposes an economic cost-benefit model that explains complexity in international banking regulation as a function of diverging preferences in multipolar negotiations. This is based on an outcome-based definition of complexity: regimes that yield a set of different potential outcomes for the same banks are complex. The degree of complexity is described by a regulatory corridor whose walls are the boundaries of this set. The larger such a corridor, the more costly are its implications in terms of stability but its boundaries come closer to the preferences of signatories. Based on this assumed trade-off, three main claims are derived: (i) states with diverging preferences will introduce at least some complexity in their multinational regulatory regime, as a regulatory corridors-solution allows at least one of them to come closer to their initial preferences, which is individually welfare-enhancing; (ii) this is not only a collective action problem, as a central planner would also introduce complexity (potentially to a different extent); and (iii) this holds in an intertemporal case with an infinite time-horizon; changing expectations might widen the optimal regulatory corridor.

Third, these claims are evaluated in three qualitative case studies on the treatment of operational risk in Basel II, the implementation of Basel III capital requirements in the European Union, and the European bank resolution regime. They find support for propositions (i) and (ii). Other methods might be needed to evaluate (iii).

A policy-relevant result of this research is that some degree of complexity can contribute to welfare-enhancement. Complexity that is the result of unmanaged collective action by states could reduce collective welfare while still being individually rational. Regulators should treat complexity as a variable in negotiations to achieve the former and avoid the latter.

Acknowledgements

A dissertation is a group effort. It marks the end of a long educational process, in which innumerable people supported me. I could not have completed this dissertation without them and it is as much their success as it is mine.

My three advisors Mark Hallerberg, Thorsten Beck, and Lucia Quaglia were exceptional. They put a great amount of time into making my research better and giving advice on all kinds of topics. More than once they corrected some stupid mistakes or read through excessive philosophical discussions of what constitutes regulation or how one could design good qualitative economic research. They challenged me when I wanted to take shortcuts to get to quicker results and they provided me with their own insights on the topics of this thesis. Given their packed schedules, this was nothing that I could have expected them to do to this extent. All this and all the small hints and kind words when I struggled vastly improved my research and my life as a PhD researcher. I am extraordinarily grateful for that. It goes without saying that they surely could not correct all my mistakes, which of course remain my own. Thank you, Mark, Thorsten, and Lucia.

Outside my team of supervisors, other academics had great influence on my work. Henrik Enderlein often gave helpful advice even though most of our meetings ended with us discussing politics. Christian Joerges extensively discussed the philosophical underpinnings of my research with me and I am looking forward to many more meetings where we can quarrel about ECB policies and a European crisis government. Especially at the beginning of my research, Michaela Kreyenfeld helped to narrow down my high-flying plans to topics that can be dealt with. Hans Peter Gr uner gave helpful comments when I started setting up my regulatory corridors model. The same goes for a number of former colleagues from the Bonn Graduate School of Economics.

All my interview partners, who took time out of their busy schedules to talk to me, deserve special acknowledgement as much of this dissertation is based on their inputs and would not have been possible without them.

Many more people gave valuable advice either directly on my thesis or on decisions I had to make while writing it. The Ronald Coase Institute workshop stands out when it comes to this, which I highly recommend to anyone who only remotely works on institutional analyses. Many thanks to the whole faculty of the 2019 Warsaw workshop, especially Mary M Shirley, Philip Keefer, and

Alexandra Benham, and all participants, who made this difficult workshop so rewarding and some of whom became friends of mine.

The academic support within the Hertie School doctoral programs has always been exceptional too. There were always people to help when one had a question, people would assess each other's research, and they would also stand ready to support each other in all kinds of ways aside from academic life. I will miss the regular visits to the canteen (including the challenging discussions with some colleagues, who had to be convinced that the food quality there was excellent) and the hour-long chats in the office that probably delayed the completion of this dissertation quite a bit.

The Hertie School itself is a great place for writing a dissertation in social sciences. The academic freedom I had regarding both content and methods used in this thesis was remarkable. I am sure that this environment will yield many great dissertations in the future. One very important part of this is the excellent work of the PhD team that often went the extra-mile to make life easier for us researchers and that was a trustworthy and helpful partner over the past years. Annika Zorn, Bernadette Boddin, Verena Neumann, and Louisa Finke as well as many others do or did a great job in making the PhD programs better every year. I also have to thank many others from administration and faculty for the numerous times that they supported me, most notably Ute Guder and the Student Life Team but also the whole Hertie community. Finally, my own students sometimes taught me more than I could teach them by questioning simple economic truths and discussing economics and the world extensively, often until late after class.

Such a PhD process also is challenging in financial terms. I am grateful to the Friedrich-Ebert-Stiftung for their generous grant, which I received over three years. Their aid helped me to go to conferences and to finish my research (almost) in time. The Hertie School generously awarded me with a completion grant when the previous one ran out. Being able to rely on such financial backing is extremely helpful and I would wish that every aspiring researcher (or better every aspiring student) could benefit from such strong backing such that they can make the best of their abilities. I had the great luck of having this support and I am grateful for that. This extends to the many contacts these organizations endowed me with – most notably my long-time mentor Robert Schütte, who stands ready to give me valuable advice whenever I need it.

Before and during the first months of my PhD I had the privilege to advise Members of the German Bundestag, Joachim Poß and Markus Töns. I am grateful to both and my colleagues there that I could learn so much from them on practical policymaking.

Not only the material aspect of a PhD is challenging but also the emotional one. I am lucky to be surrounded by a great number of good friends that have stayed in my life after every step I took – from kindergarten to university and the PhD program. Their support was especially precious during the difficult times of the Covid pandemic where every round of Mario Kart or Among Us, every cooking marathon, every walk in the park, every call, every ‘Telewein’, every heated discussion, and every trip filled up my reserves and I am blessed to have them around me. Their comments on my research were also always highly appreciated. Especially Christoph, Helen, Lana, Sandra, and Stefan put quite some time into making this dissertation better.

Getting into a doctoral program itself is the result of a long educational process and it does not only start in graduate school.

Exceptional teachers I had outside the Hertie School were Klaus Sandmann, Matthias Kräkel, and Simon Dato at the University of Bonn as well as Richard Wong in Hong Kong. However, I probably would not have made it to university without my teacher Peter Sommer, who accompanied me throughout my time as a high school student and was an exceptional teacher and mentor. Students would be lucky to have more teachers like him, who might not follow the latest pedagogical trends but simply take their students seriously, challenge them, and provide them with support when needed.

Finally, this thesis and even my whole studies would not have been possible without the support of my family. My sister Isabella often read through texts and corrected quite a few mistakes in applications that would have been less successful without her support. My parents made amazing efforts to ensure that my sister and I could study what we wanted to study. Not everyone has parents who are able to back their children the way we were supported (and that is why we must take measures to increase social mobility as a society) but also very few parents who could theoretically afford it would support their children as generously as mine did.

Life has not been easy for you in the past years. This makes me appreciate even more every time you picked me up from airports or train stations, every grocery shopping you sneakily paid for, every piece of furniture that you moved with me, every question about my research (and that you endured it when I simply did not want to talk about this complicated theory anymore), every discussion we had about politics, every time you sacrificed your own well-being for making our lives easier, and every time you did not give up on us or yourselves. Danke, Mama und Papa.

Table of contents

Advisors.....	i
Summary.....	iii
Acknowledgements.....	v
Table of contents.....	ix
List of tables.....	xiii
List of figures.....	xv
List of abbreviations.....	xvii
I Introduction and the universe of the book.....	1
I.1 Introduction.....	1
I.2 The main variables: complexity and states' preferences.....	6
I.2.1 Complexity in international banking regulation.....	6
I.2.2 States' preferences and types of complexity.....	10
I.3 The basics of international banking regulation.....	12
I.3.1 Financial regulation, banking regulation, and what it is good for.....	12
I.3.2 The nature of international regulation.....	15
I.3.3 History of international banking regulation and how it is supposed to work.....	18
I.3.3.1 Basel II.....	21
I.3.3.2 Basel III.....	23
I.3.3.3 European banking regulation.....	25
I.3.4 Layers and actors in international banking regulation.....	26
II Literature review: State of the art and blind spots.....	29
II.1 Inefficiencies in international banking regulation: the problem with complexity.....	32
II.1.1 Pre-Financial Crisis.....	33
II.1.2 Post-Financial Crisis.....	34
II.2 What could reduce complexity costs?.....	36
II.3 Theories on negotiation processes and implementation.....	38
II.3.1 General assessments of the nature of international banking regulation.....	38
II.3.2 Regulatory capture.....	41
II.3.3 A better explanation for private actor influence on rulemaking and state preferences: the formation of state-preferences on the domestic level.....	44
II.3.4 State-centric approaches explaining the negotiation process.....	48
II.3.4.1 Singer: international cooperation as a way to react to shocks.....	49

II.3.4.2	Drezner: cooperation as the result of a game among powerful actors	53
II.3.4.3	Diverging state preferences	55
II.3.5	The theory of (domestic) deliberate discretion	58
II.4	Summary and outlook of the theory of regulatory corridors	60
II.4.1	The importance of complexity in regulatory outcomes	60
II.4.2	Towards a theory of regulatory corridors	62
III	The theory of regulatory corridors.....	64
III.1	Definition of complexity: regulatory corridors	64
III.1.1	Complexity in international banking regulation	65
III.1.2	Measuring and defining complexity as regulatory corridors.....	69
III.1.3	Limitations	72
III.2	The regulatory corridors-model.....	73
III.2.1	Baseline Model.....	75
III.2.1.1	Benefits function	78
III.2.1.2	Cost function.....	79
III.2.1.3	Static optimization without negotiation	80
III.2.2	Multiple powerful actors	82
III.2.3	Introducing regulatory corridors	85
III.2.3.1	Individual actors	85
III.2.3.1	Social planner	90
III.2.4	Intertemporal case.....	94
III.2.4.1	Discounting future crises and adding expectations	96
III.3	Summary and discussion	105
IV	Empirical evaluation.....	109
IV.1	Introduction	109
IV.2	Methodological connection to previous work	112
IV.3	Choice of methods	115
IV.3.1	The relationship between the model and the empirical investigation	115
IV.4	Research strategy in the case studies.....	117
IV.4.1	General strategy	117
IV.4.2	Specific approach towards cases	118
IV.4.3	Interview strategy.....	119
IV.5	Variables and hypotheses.....	121
IV.5.1	Complexity as the dependent variable	122
IV.5.2	Explanatory variables of the model.....	122

IV.5.3	Hypotheses.....	124
IV.5.4	Counterfactual	125
IV.6	Case selection and data selection.....	129
IV.7	Arenas.....	131
IV.7.1	Basel.....	131
IV.7.2	European Union	133
IV.8	Cases.....	138
IV.9	Preliminary case: Complexity as a real problem	141
IV.9.1	Complexity as a practical problem for stability.....	141
IV.9.1.1	Evidence from Interviews.....	143
IV.9.1.2	Evidence from publications and initiatives	144
IV.9.2	The case of German Landesbanken	148
IV.9.2.1	The evasion strategies of banks.....	150
IV.9.3	Summary.....	153
IV.10	Case I: Treatment of operational risk in Basel II negotiations.....	154
IV.10.1	A new capital adequacy framework	154
IV.10.2	Operational risk treatment and how it relates to the theory.....	157
IV.10.3	The story of operational risk treatment in Basel II	159
IV.10.3.1	The three approaches and the dismissed one	160
IV.10.3.2	The floor	163
IV.10.3.3	Implementation and abolishment of AMA	164
IV.10.4	The explanatory variables	165
IV.10.4.1	Eurozone	168
IV.10.4.2	United States and United Kingdom	169
IV.10.4.3	Lobby position	171
IV.10.5	The solution mechanism	173
IV.10.6	Conclusion: Complexity as a solution mechanism.....	175
IV.11	Case II: The transposition of Basel III reforms into European law in CRD IV/CRR.....	180
IV.11.1	The new European banking regulation framework.....	181
IV.11.2	Timeline and basic setting.....	184
IV.11.3	The starting point: Basel III.....	185
IV.11.4	The central planners (H2)	191
IV.11.4.1	European Commission.....	191
IV.11.4.2	European Parliament.....	196
IV.11.4.3	European Central Bank	198

IV.11.4.4	Conclusion to the central planner perspective.....	200
IV.11.5	National influence	203
IV.11.5.1	Overview	205
IV.11.5.2	Prudential requirements	206
IV.11.5.3	Leverage ratio	211
IV.11.5.4	Other important points of the CRD IV-package (including capital base)	213
IV.11.6	Summary and conclusion	217
IV.12	Case III: The European bank resolution framework	220
IV.12.1	The European resolution framework: the remote remedies of complexity	222
IV.12.2	The clash of preferences and emergence of complexity	225
IV.12.3	Precautionary recapitalization	227
IV.12.3.1	Precautionary recapitalization as a case for intertemporal changes?	229
IV.12.4	The intertemporal case: model predictions	231
IV.12.5	The real intertemporal case	233
IV.12.5.1	The increase of complexity from MREL to MREL2	234
IV.12.5.2	The reason behind changes in MREL.....	236
IV.12.6	Discussion of results and summary	237
IV.13	General results from interviews	239
IV.14	Summary.....	242
V	Conclusion.....	247
V.1	Conclusion.....	247
V.2	Implications and future research.....	253
V.2.1	Research implications	253
V.2.2	Policy implications.....	257
VI	References.....	261
VI.1	European Union legislation used in this book	276
VII	Appendix.....	278
VII.1	Mathematical argument	278
VII.2	The case for qualitative methods to evaluate a quantitative model	284
VII.3	List of interviewed institutions	286
VII.4	Publications by the author related to this work.....	287

List of tables

Table 1: Examples for different kinds of complexity	67
Table 2: Classes of complexity and how they are treated in this book	68
Table 3: Overview on major developments in Basel.....	137
Table 4: Summary of case studies.....	139
Table 5: Distribution of total capital charges in Basel I and Basel II.....	157
Table 6: Modes of calculating regulatory operational risk precautions in Basel II.....	161
Table 7: Operational risk preferences and regulatory proposals.....	178
Table 8: Summary of positions of actors in the European CRD IV/CRR process (selection).....	189

List of figures

Figure 1: Regulatory corridors	7
Figure 2: Major steps in multinational banking regulation	24
Figure 3: Individually optimal regulation	81
Figure 4: Common regulation.....	87
Figure 5: Individual welfare-maximization through regulatory corridors	92
Figure 6: Complexity cycle.....	103
Figure 7: The process described by the model.....	125
Figure 8: First alternative explanation: regulatory capture of negotiations	127
Figure 9: Second alternative explanation: regulatory capture of a winning coalition.....	128
Figure 10: Discretion for states in regulatory capital und CRD IV/CRR.....	211
Figure 11: Regulatory corridors as a solution mechanism	2499

List of abbreviations

AMA	Advanced Measurement Approach
Art.	Article
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht [German Federal Financial Supervision/Regulation Authority]
BCBS	Basel Committee on Banking Supervision
BE	Belgium
BIA	Basic Indicator Approach
BIS	Bank for International Settlements
BRRD	Bank Recovery and Resolution Directive
CA	Canada
CET1 (2)	Common Equity Tier 1 (2)
CH	Switzerland
CP	Consultative Paper
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
DE	Germany
EBA	European Banking Authority
ECB	European Central Bank
EP	European Parliament
ESRB	European Systemic Risk Board
EU	European Union
Fed	Federal Reserve Bank of the US
FIS	Financial Instability Hypothesis
FR	France
FSB	G20 Financial Stability Board
G10	Group of Ten
G20	Group of Twenty
GFC	Global Financial Crisis 2007-9
IIF	Institute of International Finance
IMA	Internal Measurement Approach
IPE	International Political Economy
IRB	Internal Ratings-Based Approach
IT	Italy
JP	Japan
LCR	Liquidity Coverage Ratio
MPS	Banca Monte dei Paschi di Siena
MREL	Minimum Requirement for Own Funds and Eligible Liabilities
MS	Member States
NCA	National Competent Authority
NE	Netherlands
NGO	Non-Governmental Organization
NSFR	Net Stable Funding Ratio
NY Fed	Federal Reserve Bank of New York
OECD	Organisation for Economic Co-operation and Development
OR	Operational Risk
RWC	Risk-Weighted Capital
SPV	Special Purpose Vehicle

SRB	Single Resolution Board
SRM	Single Resolution Mechanism
SSM	Single Supervisory Mechanism
SVR	Sachverständigenrat [Council of Economic Experts]
SW	Sweden
TLAC	Total Loss Absorbing Capacity
UK	United Kingdom
US	United States of America

I Introduction and the universe of the book

I.1 Introduction

Failing banks and turmoil on financial markets often go hand in hand with major downturns in the so-called real economy, which makes the question of financial stability a crucial one for economic policy. Financial intermediaries are needed to keep an economy running and to connect its actors. Just like human organs, all economic actors – producers, traders, households, importers, exporters – have their special function and are connected by veins filled with capital that is moved by a steady heartbeat – the respective distribution system. Organs would not function if there were no blood transporting oxygen from the lungs to each and every place in the body where it is needed. The heart's only purpose is to keep this system running. One could say it only serves as an intermediary between all the other organs and, yet, it has become the ultimate synonym for the most important part of a system. A beating heart is the decisive sign of life. Financial markets and banks fulfil this function for the economy. They pump money through the system and ideally provide those with capital who need it to fulfil their function in the economy. If banks and other financial actors fail, the result is similar to a heart stroke – well-functioning organs will stop working and the system collapses.

The Great Financial Crisis of 2007-9 was such an incident for the world economy. A significant share of the financial sector was not working properly and this affected the real economy of almost all major countries – the organs of their economies could not function as they did before. Millions of people lost their jobs, many saw their life savings vanish, government debt exploded, and some countries and the European Union were at the brink of collapse in its aftermath. The Financial Crisis was an extraordinary event comparable to the 1920s/30s Great Depression and represents an extreme case of how financial turmoil can wreck the economy. However, the Great Financial Crisis was only the climax of a development that took place since the 1970s when the post-World War II order of capitalist societies broke down and Western countries switched from Keynesian¹ embedded liberalism to more liberalized economic approaches. This essentially

¹ Or much more Whitheian, see Steil (2013) for a detailed analysis of the battle between John Maynard Keynes and Harry Dexter White about how to organize the world economy after the war.

meant that states abolished capital controls and switched from a fixed exchange rate system to a floating currency system with open capital markets.

Since the collapse of this old system, numerous smaller banking crises have occurred and financial stability has deteriorated. Laeven et al. (2012) have identified 147 systemic banking crises in the period from 1970 to 2011 while there were almost none in the decades before. They count per country, which means that a significant share of these banking crises occurred during the Great Financial Crisis (which stretched across the globe), but a majority of crisis events took place before that. We still recall some of their names: Tequila Crisis, Asian Financial Crisis, or Latin American Debt Crisis. As the names indicate, they often occurred in multiple countries simultaneously and were regionally concentrated; rarely one country suffered a unilateral crisis.

There has almost always been an international component in the developments leading towards the respective crisis and in their evolution. Again, this can be best seen in the Great Financial Crisis, which started with the so-called Subprime Crisis in the US. Foreign capital had been flowing into the US for years and was largely invested into real estate. Mortgages were given out like candy on Carnival (or Halloween). Many of those who got a mortgage were not creditworthy at all, but that did not matter for mortgage brokers and lenders. They simply bundled them and sold them to banks and investors around the world as so-called Subprime Bonds. When the system broke down, nobody knew how many of these toxic Subprime Bonds a bank had in its books and whether the bank was already bankrupt or just faced major losses. This hit US banks as well as other financial actors around the globe that had either bought toxic papers directly or were connected to a failing entity. Eventually, the inter-bank market, where banks could get or store liquidity when needed, dried out because lenders could not assess the creditworthiness of borrower banks anymore. Such inter-bank markets were global as was the loss in trust by banks in their domestic and international peers. This led to a breakdown of banking, securities, and (to some extent) insurance markets in most industrial countries, culminating in the Great Financial Crisis as well as the following Great Recession. Former crises may not have had a similar scope, but the basic dynamics of international contagion were similar. This has led to reactions by states concerned with financial stability both domestically and beyond.

Rules for banks regarding their risk taking, their supervision, precautions against crises, and disclosure requirements have been put into place after most crises – nationally but also especially internationally. They were always meant to prevent such crises and contagion across countries. An ever-more integrated international financial system needed safeguards against failures of

some parts. Just like humans have to take special care of their circulatory system in order to keep their body running, economies must keep their financial system in shape – usually, this only becomes clear to people when such a crucial part stops working. Meanwhile, the financial industry has become subject to plenty of regulations that are only comparable to rules for firms that directly deal with the well-being of people – pharmaceutical firms or food processing. All over the world, regulatory bodies exist that set rules for the financial sector and supervise it. They often have extraordinary powers and they can even close a bank or prohibit financial products under certain circumstances. The basis for such actions is financial regulation, which is a set of rules that steers the behavior of actors in the financial sector in an economic area or internationally. This brings us to the specific topic of this book.

In the past years, the matter of complexity in international regulation has become ever more present as it was criticized for being responsible for inefficiencies in such regulation (see, e.g., Caprio, 2013; Haldane & Madouros, 2012). How such complexity emerges is unclear and the central subject of this research. If criticisms of complexity are valid, the latter would enable banks to ‘optimize’ their regulatory burden through evasion strategies, especially in an international setting where complexity might result in different applications of harmonized rules. Hence, rules become less powerful in achieving the goal of financial stability. It is puzzling why states would agree on such a potentially suboptimal regime. Discovering the causal mechanisms behind this puzzle is the main subject of this book.

It is important for regulators themselves as well as observers of regulation to understand the emergence of regulatory frameworks and its flaws both theoretically and empirically. Policymakers should be aware of the implications of their actions and how regulatory outcomes could be altered. NGOs and watchdogs should have an idea of what to press for to serve their mandates. Thus, blind spots and unclear causal relationships of central parts of the regulatory regime can lead to flawed research results as well as unexpected consequences in policymaking. Rigorous research that is based on a comprehensive theoretical framework and then supported by empirical research can reduce such uncertainty about causal mechanisms. Empirical examinations without theory will lack clear and generalizable results and might not spell out assumptions and mechanisms clearly but rather treat the actual process as a black box. Theory without empirical support can always be suspicious of just being a thought experiment. This is in line with Beck's (2016) suggestion that “[...] while most of the literature on cross-border regulatory cooperation has used theoretical models, more empirical work is urgently needed to test different and possibly contrasting theories.” (p. R48).

Hence, this book will first introduce an abstract economic model that results in the theory of regulatory corridors, which explains the causes of complexity in international regulatory harmonization. The theory makes complexity a dependent variable with the negotiation process as well as the preferences of states as explanatory factors. Complexity is defined as the range of potential regulatory outcomes under one and the same accord – depicted by the metaphor of a regulatory corridor whose walls are the most extreme outcomes that the regulatory framework allows. This complexity is assumed to come at a cost in line with the criticisms discussed before. The first claim of this theory is that states with diverging regulatory preferences will create complex international harmonization frameworks to increase flexibility to come closer to their preferred regulatory regime at the cost of increased complexity. Complexity becomes a solution mechanism. Second, the model argues that this is not only a coordination problem but that also a central planner would introduce complex regimes – potentially to a different extent. Lastly, the model shows how changing expectations and discounting of future costs might change regulatory outcomes over time and might lead to increased complexity after long periods of financial stability. This translation of the two static propositions into an intertemporal setting provides an explanation for financial cycles where stability deteriorates over time as expected costs from instability dwindle. The main mechanism behind this proposition – besides discounting future costs – is that future costs from complexity can only be estimated and always remain uncertain, leaving room for changing expectations of such costs. By assuming that these expected costs shrink in long periods of stability, the third part of the model predicts widening regulatory corridors over time. This is because the benefits of individual regulation become more important in relation to the shrinking expected costs.

The theory of regulatory corridors as a solution mechanism to diverging preferences of states is the main contribution of this research. It turns complexity from an unwanted side-effect into a potential feature of regulation.

The predictions from the model are then evaluated in three separate qualitative case studies of international and European banking regulation, each focusing on one of the three main claims. Data for these case studies was gathered through interviews with practitioners as well as through tracing the processes of international regulatory negotiations through speeches, position papers, and other negotiations documents. The first hypothesis of complexity as a solution mechanism, which forms the basis of the regulatory corridors-theory, is supported both in a relatively anarchic international setting and the more structured European arena. The treatment of operational risk in Basel II – the main international banking regulation accord before the

Financial Crisis – shows how complexity helped to reconcile diverging preferences between major international players. Similar patterns occur in the European Union (EU) regarding reforms on capital requirements for banks and their resolution regime after the Financial Crisis. As many EU agencies make policy for the entire bloc, the second claim of the model on the role of a central planner can also be tested here and is confirmed. In contrast, it is difficult to find support for the intertemporal claim of the model, which would predict more complexity over time. Intertemporal examinations suffer from much external noise that influences banking regulation, making it difficult to identify clear causal relationships. Thus, the intertemporal regulatory corridors-hypothesis remains without empirical support but the basic theory of regulatory corridors is supported by evidence. Complexity is used as a solution mechanism despite being costly. Further research would be needed to evaluate the third part of the model.

This work adds to the understanding of the international regulatory process and might contribute to decision-making by adding another dimension in assessments of negotiation outcomes. When complexity is explicitly seen as part of a solution, more conscious decisions can be made on how complex the result should be and how much complexity-costs are seen as acceptable. Therefore, the theory of regulatory corridors essentially reconciles the criticisms of complexity with the reality of regulatory outcomes, which brings research closer to understanding the respective negotiation process.

A major criticism of the theoretical approach chosen here could be its abstraction from non-state actors that influence decision-making on the international stage. An influential part of literature on problems with regulation relies on industry involvement as an explanatory factor. As will be argued later, such actors, especially lobbyists, would have to form an agenda of introducing complexity into regulatory harmonization accords. This might make sense based on a *qui bono*-argument but seems to be at odds with the reality of international regulatory negotiations. Banks themselves have diverging agendas and their influence on the particular subject of complexity seems to be limited. Lobbyists might reinforce differences across states or exploit them but they are not the ultimate causal factor for complex outcomes.

The remainder of this introduction will make the case for why complexity is an important subject to study and will outline the main explanatory variable that will come up time and again throughout this book: states' preferences and how they relate to complexity. Section I.3 of the introduction will then briefly cover the history, arenas, and actors of international banking regulation. The next chapter will examine existing research and how it fails to provide a

convincing explanation for complex outcomes in international banking regulation negotiations. The model in chapter III then builds upon the arguments from chapter II by first introducing an abstract definition of such complexity and later developing the theory of regulatory corridors. Chapter IV covers the empirical examination of that theory. Chapter V concludes and relates this research to policy challenges and future research.

I.2 The main variables: complexity and states' preferences

I.2.1 Complexity in international banking regulation

This book is supposed to contribute to the literature on the international dimension of banking regulation and how it is negotiated. It is useful to take a step back to evaluate the importance of regulatory harmonization and, thus, complexity in this field.

Evidently, past regulatory arrangements have not prevented all crises – probably some, we will never know. On the domestic stage, some countries like Canada seem to be doing better than others in terms of regulatory crisis-prevention (Calomiris & Haber, 2014), but local regulation can only be part of an international framework in a world of globalized finance. There are always contagion risks or ways for international banks to evade rules if they diverge. Since the 1970s/80s, regulators and international negotiation groups have tried to harmonize or at least coordinate international financial regulation among the most developed countries. Harmonization would bring regulation to the global level at which major banks operate – a necessary adjustment if one wants to steer the behavior of global markets. Yet, this joint regulation can still be weak in itself or can fail to go far enough in terms of harmonization. The latter would counteract the initial efforts and open avenues for cherry-picking by banks that can play regulators by making use of unclear regimes. The failure to create harmonized international regimes even if that comes at a cost is the subject of this piece.

The motivations for states to negotiate or join an international harmonization regime and the nature of such regimes have been subject to extensive research. Outstanding examples of political science literature that have a rather holistic approach on international banking regulation come from David Singer and Daniel Drezner. Singer (2007) attributes the emergence of international regulatory harmonization to trade-offs between competitiveness and stability concerns of dominant economic powers. Negative competitiveness effects of more stringent, stability-enhancing regulation for domestic banks can be mitigated by imposing similar rules on their

international competitors. This is in line with the general arguments by Ethan Kapstein (2006) who regards harmonization as attempts to create a level-playing field for banks. Drezner (2007) chose a more general approach and sets up a basic game theory model that predicts when and to what extent states harmonize regulation based on costs and benefits as well as the power structure in the game. For banking regulation, he concludes that powerful states had similar interests and designed harmonized banking regulation as a club standard to their needs. Whichever country wanted to join their club had to accept their rules.

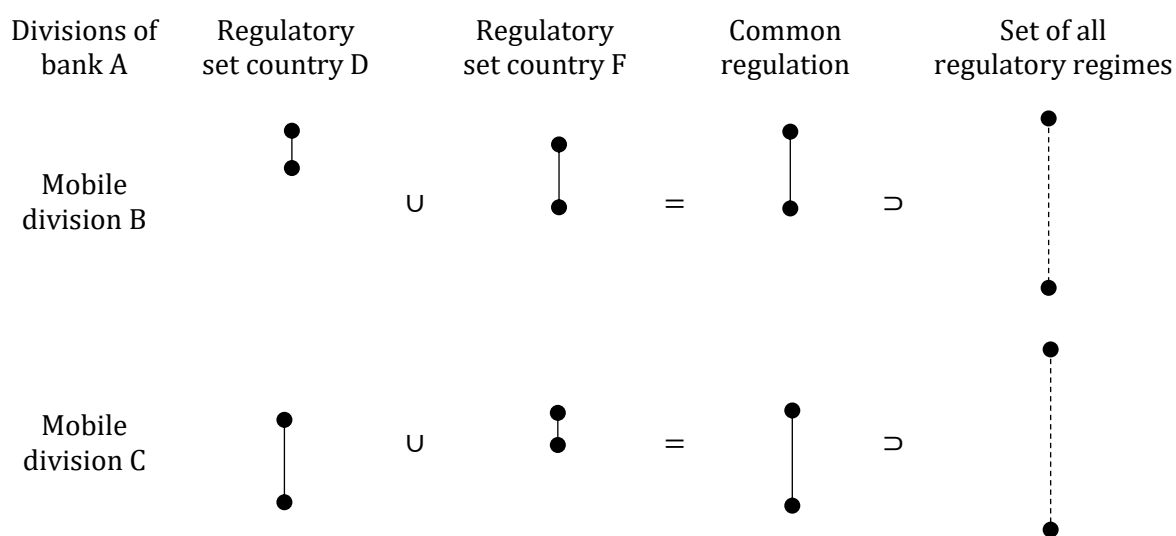


Figure 1: An internationally active bank A could split up into divisions and move these divisions across borders to achieve more flexibility in what regulation applies to it. The individual country has less control over the regulatory boundaries each division encounters. This is already a depiction of how a regulatory corridor can widen through insufficient regulatory harmonization across countries.

The apparent inability of contemporary international banking regulation to prevent crises is explicitly or implicitly covered by these approaches as well, but they work with the assumption of a unique set of rules as outcome of harmonization attempts. Singer observes reduced stringency in international banking regulation over time, which he attributes to little need for stability-enhancement due to a relatively calm and prosperous period on the banking market. According to Singer, the stability on the banking market in the early 2000s led to little need for regulatory intervention and the countries that previously needed strict harmonization to enhance stability while maintaining competitiveness could loosen their own rules. There was no need for strict harmonization because domestic rules could simply be relaxed – at least this was what regulators thought. Drezner's argument would go in a similar direction by simply assuming that less stringent regulation was benevolent for the powerful club powers. He argues implicitly that the nature of international banking regulation is the choice of powerful actors that maximizes their cost-benefit calculation. Both authors do not go into detail about potential shortcomings of

banking regulation and they simply treat the outcome of the respective negotiations like domestic regulation that is coherent and enforceable. States would only face the choice to comply with these rules or not, which is not what we observe. This is unfortunate as the nature of the outcomes is closely connected to the negotiation process they describe and the incentives states face in regulatory harmonization.

This assumption that international regulation is a singular set of rules that can be followed or not in a binary sense seems rather unrealistic. Especially later accords that were negotiated in the late 1990s and up to today have been heavily criticized for being dysfunctional mostly due to high complexity, many exceptions, and the resulting loopholes as well as leeway for states to make use of these exceptions or not (Barth et al., 2014; Caprio, 2013; Danielsson et al., 2001; Haldane & Madouros, 2012; Kane, 2007). The complexity of the accords makes the eventual outcomes look much less like some form of coherent regulation, they rather are a set of potential rules, a menu from which different regulatory regimes can be chosen. This book calls these sets of regulation *regulatory corridors*. Such a corridor is broadly defined as a regulation that allows for multiple outcomes under the same regulatory regime. There will be more or less strict upper and lower bounds to the set of regulatory outcomes, which will eventually determine how wide the corridor is. The wider the corridor the more complex is regulation in the sense of this book.

Such complexity is associated with costs as critics like Haldane & Madouros (2012) argue with special reference to negative effects on financial stability. This book will also argue later why regulatory corridors can be seen as threats to financial stability. However, this is just an application of arguments already provided by many others. Tarullo (2008, p. 172) states that “the very complexity of the A-IRB approach [the most sophisticated mode of calculating regulatory capital in the 2004 Basel II accord, which will be covered later in this chapter] gives banks more opportunities to manipulate, or make mistakes during calculation of their capital ratios.” The European Systemic Risk Board regards complexity as potentially problematic for robust regulation as well (Gai et al., 2019) and also the Bank for International Settlements has made reducing complexity a goal (Restoy, 2018). Also Quaglia & Spendzharova (2019) show that regulators were rather keen on coherence with regard to international loss absorbing capacity-regulation. These are just a few examples of a growing concern about regulatory complexity and its negative effects. However, even before the Basel II accord was published, the US Comptroller of the Currency spoke of its “mind-numbing in its complexity” (Hawke, 2003b, p. 4).

Given such costs of this complexity, there must be some reason for its existence that outweigh the downsides. The overarching research question of this contribution, thus, is to investigate the reasons for states to agree on complex regulatory harmonization accords on the international and European level given that they seem costly. This is closely related to the financial stability argument and criticisms of regulatory complexity.

This question refers to the process of international negotiations, but also to the relevant actors and their incentives. Are banks so powerful that they can directly or indirectly dictate the rules? Do regulators play the main role in this game? Do their preferences for regulation coincide in favor of complex regulation? Or is complexity a result of diverging interests?

Maybe banks are so powerful that they can influence regulators so much that they only introduce sham standards that keep the public calm until the next crisis. Maybe states behave rationally by finding a lowest common denominator solution. Maybe there is no other, less complex solution. As will be discussed later, regulatory capture arguments that actually ask who might profit from complexity fall short of having much explanatory power for the emergence of complexity as banks would face a collective action problem in coming up with an agenda to make regulation 'complex' through influencing decision-making. There are few other actors that might cause complexity to emerge in regulation – most others are state actors.

If we follow this argument, which will be expanded in the next chapters, a crucial puzzle emerges: Why would states introduce regulatory regimes that are costly for them?

The theory of regulatory corridors, which is set up and empirically tested in this book, is an answer to this puzzle. The theory explains complex regulatory outcomes in the specific setting of international banking regulation. It suggests regulatory corridors as solution mechanisms to diverging preferences of states that want to harmonize regulation but still keep some flexibility either for their banks or for their regulators in how to apply the rules. The much-criticized complexity becomes the dependent variable of a negotiation game between roughly equally powerful actors who regulate active entities such as banks and vary in their preferences, the main independent variable.² The role of preferences is briefly introduced in the next sub-section.

² Beck et al. (2018) already showed empirically that even if supervisory cooperation between banks would lead to more stability, it might not be worthwhile every time due to economic and other costs of such cooperation. This trade-off will remain important throughout this book.

1.2.2 States' preferences and types of complexity

Each country's economy is organized differently and this probably has direct effects on their preferred set of rules. Some economies rely very much on financing through commercial banks and might need looser standards to improve credit supply to foster economic growth. Others are based on market financing and they just need non-volatile securities markets – having stable, prudently regulated banks might be a major factor that contributes to that. Additionally, banking sectors differ across countries; some rely more on huge banks, others have many small financial institutions. A high share of government ownership in banks might also lead to preferences for looser regulation (Kara, 2016). Adjustment costs and other domestic factors generally influence preferences of US and EU regulators (Quaglia & Spendzharova, 2017). International regulation has to reconcile these preferences and also ensure appropriate implementation to achieve harmonization. A regulatory corridor where states (or their banks) might come closer to their individual optimal (or preferred) level of regulation would help resolving this clash of preferences while still achieving some harmonization. Thus, they would provide a preliminary explanation for complexity in these agreements. This seems to be in line with anecdotal evidence of how complexity emerges on the international stage and also research that suggests that different levels of supranational cooperation in banking supervision might be optimal across different regions (Beck & Wagner, 2016).

Obviously, harmonization has been a difficult endeavor in recent years; banking regulation differs fundamentally across countries with consequences for them, but also for their international partners. Amri & Kocher (2012) find both variance in supervisory powers of regulators and a significant negative effect of stricter supervision rules on the probability of having a banking crisis. Hence, simply changing powers of regulators influences stability; a minor change in how rules are enforced has an effect on the likelihood of banking crises. To give an example, just look at standards for assessing the competence of board members in different European countries (European Central Bank, 2018) – a standard regulatory requirement that is supposed to improve internal supervision. European banking regulation requires competence checks for bank board members, but this rule has to be translated into national law to be applicable to banks. Hence, EU regulation represents the international stage here while nation states represent the domestic level where the sovereign implements harmonization agreements. European national governments adhered to their commitment to implement this rule but did so in different ways; they all have laws that require banks to prove that their board members are qualified to supervise the bank's activities, but some countries do not set a time frame for this check. Hence, in some

countries competence checks can take place whenever it suits the bank which means that in case the bank has doubts about the board member's competence, it postpones their competence check to the end of their term in office. This probably rooted in their banking systems where sometimes politicians supervise public banks. Consequently, the regulation is not binding at all in these countries and supervision cannot work efficiently. This minor example also shows that the European Union might be seen as one regulatory area to some extent, but certainly not as a perfectly united entity. The variance across countries would account for complexity in the sense of the model.

National differences in implementation are only one side of the coin; general holes in banking regulation agreements – for example, due to exceptions that are written into the accord to satisfy some states – are the other and probably even more important problem because they destabilize the whole international system symmetrically. The whole purpose of international regulation is to harmonize standards with the goal of enhancing stability; if rules are flawed and result in unintended behavior by banks, this purpose of stability-enhancement is corrupted. In the best case, this leads to inefficient rules, but we will see later that some parts of international banking regulation probably even exacerbate instability on the international banking markets and direct capital into risky assets. Sometimes such flaws were already obvious when international agreements were concluded (see, e.g., Danielsson et al. (2001) on Basel II). Essentially, many critics of actual banking regulation point at the complexity of the initial accord when arguing that international rules are dysfunctional; they argue that complexity due to exceptions and complicated rules results in flaws that destabilize the entire system (e.g. Haldane & Madouros, 2012). A major purpose of this piece is to shed light on the question why states might still agree on rules that do not help to achieve the promise of a stable globalized banking system.

This provides us with two possibilities how banking regulation on the international level might become complex: *ex ante* and *ex post*. *Ex ante* complexity is the result of special interests of some actors that enter the eventual international accord. For example, some states might want to support their real estate industry and negotiate exceptions for mortgages into the international agreement. Banks can make use of these exceptions. This increases complexity and might have adverse effects on stability. *Ex post* complexity emerges when states use leeway from the *ex ante* agreements to implement diverging rules. The international regulatory framework might rather look like a patchwork instead of a coherent regime if implementation diverges too much. Yet, both mechanisms yield a similar result: a widened regulatory corridor for banks – either directly through the international rules or by using leeway through differences in implementation. Thus,

these two types will essentially be treated the same through the outcome-based definition of complexity in chapter III. Thus, the model explains both types simultaneously. Yet, it is necessary to keep these two possibilities in mind when complexity is discussed as the implications of this distinction outside the model world can be significant.

After these introductory remarks, we still need to explore the universe this research operates in. This is particularly for readers who are not familiar with the modern history of international banking regulation, its main actors and arenas, and the institutional context surrounding it. Readers that have been working in the field or are experts in regulatory research will find little new information in there.

I.3 The basics of international banking regulation

I.3.1 Financial regulation, banking regulation, and what it is good for

The financial sector includes several types of actors such as banks, insurance companies, and securities markets, which are regulated and supervised by specialized agencies. They are all interconnected and it is not always clear whether some regulation only influences banks or also other types of financial actors. Yet, this piece is focused on banks.

What these actors certainly have in common is that their products are information-based. Their business secrets are not based on how to produce some car parts at very low costs, but they consist of superior information compared to competitors (be it other companies or self-organized individuals); this is their production technology. Furthermore, a bank also pools resources of its creditors, the normal bank clients, and usually reduces their individual risk. Even if their children start a business, very few parents will bet all their live savings on them to succeed, even though they have the best information available to assess the riskiness of the endeavor. They will rather support their children to some extent and leave the rest to banks (if possible), because if the firm fails, the losses will be borne by the bank as a whole that pays for them from its profitable investments. If the parents had invested all their money in their children's firm and it failed for whatever reason, they would have lost everything. Hence, the stylized business model of a bank is based on superior information and scale effects due to pooling. Similar cases can be made for other financial actors such as insurance companies.

Financial actors' business models are, thus, based on secrecy and attracting enough customers or investors to profit from economies of scale. This combination has innumerable, decisive effects on the incentive-structures of banks and can likely result in outcomes that maximize profits for banks but are far-suboptimal for society as this profit-maximizing behavior is likely to go along with excessive risk taking or very one-sided investments (which would increase the economies of scale on the investment side). In its extremes, such behavior can result in plain fraud but the issue here is the more subtle strive for profits in legal ways. Risk always plays a role in the financial business and it is difficult to hold managers accountable if this risk is realized, even in excessive margins. Staying in the banking example, managers of a bank that is in financial trouble might try to keep its business running by attracting more depositors through excessive interest rates. This would essentially result in a Ponzi scheme that breaks down at some point causing major losses to the depositors who could not assess the bank's health. Banks might also conduct their investment with very little capital backing or finance them entirely through deposits which would mean that already minor losses in one investment would result in a negative net balance and bankruptcy of the bank. This might be worthwhile for banks that expect to be saved by states in case of failure or for short-sighted managers. Or banks might invest heavily into illiquid assets making timely repayment of deposits more difficult. All these and many other issues represent problems of banks being left without rules for conducting business. Again, similar arguments can be made for other financial actors.

On the other hand, banks might be forced to behave in an unsustainable way as their competitors do the same. Rat races, where banks enter ruinous competition, might emerge if banks compete for customers and depositors while having to reduce precautions against losses. This is almost a necessary consequence of economies of scale: if a bank loses customers, its offers will become less attractive, which makes it lose even more customers.

Such behaviors of financial actors can hurt individual depositors, but also whole economies if they are conducted systematically. If the financial industry does not function properly, the customers suffer first because they lose money. Besides the costs for helping those customers, states also suffer from financial actors not being able to fulfil their function for the economy anymore. As described before, if a number of banks fails, capital allocation in a country will not work properly anymore. For the time before Basel II was agreed, Hoggarth et al. (2002) estimate that banking crises lead to output losses in crisis countries of 15-20% on average compared to annual GDP. Laeven & Valencia (2018) show that systemic banking crises (not the failures of single banks) are especially causing output losses and long-lasting effects for high-income countries. They also

show that there is a correlation between banking crises and sovereign debt as well as currency crises. Reinhart & Rogoff (2013) also show that banking crises lead to high fiscal costs and increasing sovereign debt burdens across high- and low-income countries. They also find that a misallocation of capital (bubbles of asset prices as well as large credit boom – often fueled by capital inflows) is associated with banking crises as was the case with the Great Financial Crisis, which serves as the standard example for banking market problems in this book. Thus, one can say that banking instability (and most likely also instability of connected markets such as insurance) is costly for societies.

Financial regulation is supposed to mitigate these problems. The Congressional Research Service (2020) summarizes that

“[f]inancial regulation aims to achieve diverse goals, which vary from regulator to regulator: market efficiency and integrity, consumer and investor protections, capital formation or access to credit, taxpayer protection, illicit activity prevention, and financial stability.”

This can be done through different channels that are outlined in the same piece, most notably prudential regulation (referring to the safety of an entity in crises), disclosure, and standard setting. Minimum requirements for capital, inspections, best-practices, or market control through increased transparency can be tools to do that.

Essentially, financial regulation attempts to set the rules of the game such that firms cannot simply make use of their business model of secrecy and a natural lack of transparency. Just as customers of pharmaceutical companies are not able to know what is in their pills and what potential side effects may occur if this sector was not regulated, the financial industry needs rules to function not only for its shareholders and managers, but also for its customers and the public.

Circumventing the problem of defining financial regulation in more detail, this piece purely focuses on banking regulation. To different extents, banks are still the backbone of financial intermediation within economies. In some economies commercial banks are the most important intermediaries between economic actors, while investment banks dominate other countries, but often it is not even clear whether a bank is more of an investment bank or a commercial bank. Even if a distinction is feasible, these banks are so much interconnected that a crisis of an investment bank can also do major harm to commercial banks and vice versa. Furthermore, financial crises mainly are banking crises that have significant effects on the real economy while

fluctuations in other financial industries rarely directly translate into turmoil in the real economy. In this piece, banking regulation refers to rules for commercial or investment banks in terms of requirements for maintaining their business and not being punished or closed by authorities responsible for such actions. We will see later that this mostly includes direct rules like capital requirements based on the riskiness of its assets, other precautionary requirements, and transparency standards, but also rules for supervisors on how to assess the risk of bank failure and the systemic relevance of a bank.

1.3.2 The nature of international regulation

The mobility of capital almost necessarily leads to an internationalization of banks, making international cooperation in this field inevitable. This can easily be seen when setting up a very informal and basic model. If a bank has excess capital, its shareholders usually demand it to invest this capital where the highest returns can be expected. If capital is abundant in Germany but scarce in Italy, Deutsche Bank will invest in Italy in order to maximize its profits – abstracting from all other factors that might influence investment decisions (such as legal system, knowledge of the market). Consequently, a failure of Deutsche Bank will affect both Germany and Italy. It is important to coordinate on supervision to make sure that no blind spots exist in which a bank can operate unsupervised, but it is also important that a bank cannot simply escape strict regulation by investing in another country. The real interconnectedness of banks and national markets is, of course, way more complicated, but this example shows why rules for banks cannot only be determined on a national level without considering international interconnectedness.

The American Subprime Crisis could only emerge into the world-wide Great Financial Crisis and later Great Recession because international banks had invested into junk bonds in the US or lent to other banks that owned a substantial amount of these toxic assets. This started a chain reaction that only few greater banks survived without state aid and resulted in the most severe economic downturn since World War II. The consequences drawn from this experience can be based on two strategies: better international regulation of banks to prevent financial crises in the future or isolating the national financial markets by ending international capital mobility.

All relevant capitalist governments rule out the latter, international cooperation is the only viable alternative for stabilizing banking markets at the moment. Simply letting every country take care of its own banking sector and bringing the ability to decide about economic policy including the set of rules for its intermediaries back to the national level into one hand seems to be a promising

idea, but it collides with the prevailing ideology of liberalizing markets. Hence, international cooperation and harmonization of standards to a level that ensures sufficient regulation across borders is the only option left.

In a (potentially) perfect world, the relevant actors – states – would choose a way to ensure financial stability and adhere to it completely. If they choose cooperation instead of isolation as their model of ensuring international financial stability, one could expect that they also bear the consequences and create institutions for efficient regulation across borders. This is not the case in the prevailing international ‘Westphalian’ system that puts the sovereignty of states above all and gives countries the ultimate power to implement international agreements or to ignore or alter them. The European Union has overcome this Westphalian system to some extent and created common regulatory institutions over time, but nothing similar exists on a more international level. Consequentially, the definition of ‘domestic’ in this piece means unified regulatory areas representing one level of banking regulation regimes. The other level is the international stage. Usually, the domestic stage refers to nation states, but sometimes the European Union must also be regarded as a more or less unified regulatory area, sometimes not. This has to be determined on a case-by-case basis.

The Westphalian System of state sovereignty creates a mismatch between the globally acting private sector and its public regulators that only have power on the domestic level. The absence of a world constitution that would force countries into compliance with common rules reduces the power of such rules and agreements. It is a necessary consequence that states remain the dominant actors when enforcing regulation vis-à-vis globally operating banks. Besides giving banks the opportunity to choose their regulators to some extent, this enables states to exploit the system for their own advantage which might be seen as one of the most likely reasons for international regulatory failure.

A potential consequence of the mismatch between regulatory power and the level the subjects of regulation operate at is an increased danger of free-riding behavior by states. Free riding means profiting from cooperative behavior of others through unilateral non-cooperation at the cost of others. States alone decide whether and how to implement the results of international negotiations. There is no such thing as a world government, a constitution, or a court that could enforce an international agreement. There is just a threat of exclusion. Countries also bear the costs from international banking crises, but non-compliance with rules and suffering the consequences are not necessarily connected. This is a classic setting for free-riding problems

where non-cooperation is a dominant strategy even if it reduces overall utility; a country that does not implement strict rules will improve its economic position (compared to countries that do) profiting from attracting international actors and their capital. At the same time, it probably does not bear the full costs (having banking crises) from non-compliance with stability measures, because internationally operating banks' failures affect other actors as well by definition. In absence of all other factors that might influence cooperation decisions. However, other states would anticipate non-cooperation by others and reduce their own regulatory burden as well resulting in very weak rules all over the world despite efforts to harmonize and increase regulation.

Nevertheless, such ex post non-compliance with international accords is not as common as one would assume, states and governments most often comply with international regulations, but they use all the leeway within agreements. Several mechanisms might reduce incentives for free riding including negative effects of non-compliance on other, potentially unrelated international agreements, the power of some countries to force others into compliance through economic or other threats, or the potential sanctioning of non-complying countries by closing borders for capital and bank services. These and many other potential costs of non-cooperation and non-compliance with rules appear to make them less likely.³ This rules out one of the most obvious potential reasons for a dysfunctional international system: it does not seem to be an unregulated space where each country follows its optimal non-cooperation path. International harmonization agreements are followed to some extent; one could say that they are binding, meaning that they actually have an effect on states' behavior and do not represent sham standards (which is also supported by Drezner's (2007) investigation). They tend to stay in their regulatory corridors. The problem that makes international regulation potentially weak rather seems to lie within the system including leeway for states to deviate from harmonization and insufficient provisions in the harmonization agreements. As explained before, this complexity appears to be a decisive factor in reducing the effectiveness of international regulation.⁴ This will be motivated further in the following sections. But before we move on to the arguments of this book, it is important to understand the background and how international banking regulation has evolved over time.

³ Reports on implementation of regulation support the broader claim (e.g. Basel Committee on Banking Supervision, 2016a).

⁴ Another obvious factor would simply be very weak standards but the nominally ever-stricter regulatory environment makes this less of an issue in post-crisis times.

1.3.3 History of international banking regulation and how it is supposed to work⁵

Since the 1970s when the system of embedded liberalism (see Ruggie, 1982) – a capitalism managed by international institutions – broke down, there were attempts to cooperate internationally to foster global financial stability. Not the embedded liberalism itself but the associated Bretton Woods system was crucial for financial stability: international capital markets were not free under this system. Every country could regulate its own financial market but also had to bear the costs of crises. The new system liberalized this and opened capital and currency markets. One of the first casualties of the new, liberalized order was the German Herstatt Bank, which failed in 1974 because of excessive currency speculation. This failure was important, because it revealed weaknesses in the new system of floating exchange rates (the old Bretton Woods system was built on fixed exchange rates) which made speculation with currencies possible. As a direct reaction to that, a standing group for international banking stability was established at the central bank of central banks, the Swiss-based Bank for International Settlements: the Basel Committee on Banking Supervision (BCBS, initially: Committee on Banking Regulations and Supervisory Practices). According to its charter,

“[t]he BCBS is the primary global standard setter for the prudential regulation of banks and provides a forum for cooperation on banking supervisory matters. Its mandate is to strengthen the regulation, supervision and practices of banks worldwide with the purpose of enhancing financial stability.” (Basel Committee on Banking Supervision, 2018)

This newly established group almost immediately came up with ideas for better international banking supervision: the so-called “Concordat” (Basel Committee on Banking Supervision, 1975). The Concordat is widely regarded as a predecessor of the greater regulatory accords and it was mostly meant to set the rules for cooperation between supervisors on the international banking market. This was necessary to ensure that at least one public authority supervised each bank as well as its subsidiaries and branches. The most important provision in the 1975-Concordat was the establishment of the host country rule: a country was usually responsible for the supervision of banking activities within its jurisdiction. This principle was partially revoked in 1983 and the home country (the country where the parent company of a subsidiary or branch is located)

⁵ This is just a very brief, introductory history. More detailed accounts of the history of the Basel Committee can be found in Goodhart (2011) and Wood (2005).

became more responsible for banking supervision (Basel Committee on Banking Supervision, 1983) – this home-host country divide in responsibilities remains an issue of regulation nowadays. The Concordat was revised multiple times to adjust it to new developments or to improve it in general. However, aside from regulating responsibility for supervision it only ‘suggest[ed] ways of improving its efficacy’ (Basel Committee on Banking Supervision, 1975, p. 1). Hence, it only advised states on how to conduct supervision, it did not include explicit standards.

The first time that truly binding rules were established was in the first Basel Accord (Basel Committee on Banking Supervision, 1988), later known as Basel I, which set minimum standards for bank capital and how to measure the risk of a bank’s portfolio. This was done under the lead of an Anglo-American coalition (Kapstein, 1989), which will be an important feature of this first attempt in the discussion in chapter II. ‘Binding’ will mean throughout this book that rules or agreements actually have an impact. A sham standard that is so weak or includes so many loopholes that it has no or a very limited effect compared to a situation where such a standard is absent is non-binding regulation, while a comprehensive standard that puts a burden on relevant actors is considered as binding.

Basel I was the first of such agreements that would require regulators and, thus, banks to alter their behavior based on international agreements between states (Kapstein, 1992) – only after implementation of the international rules into national laws though. In this case, it set capital requirements for banks above the level they would choose without regulation (Singer, 2007). Such capital requirements still represent the backbone of contemporary banking regulation. The simplest form of capital requirements means that a bank has to finance each of its assets to a certain extent with capital obtained through giving out stocks, other forms of equity, or disclosed reserves. This means that in case of losses, the bank does not have to close overnight because of insolvency (its liabilities exceed its assets). The losses are borne by the shareholders who would also profit most when the bank runs profits. Due to fluctuations in assets, every bank will finance investments from capital to some extent, Basel I just increased this quota such that the banks could endure more turmoil in their assets before the net worth of the bank would turn negative.

Going into more detail in terms of technicalities, Basel I also introduced risk-weights, a method to calculate the required capital buffers based on the risk-structure of the assets. These risk-weights became a cornerstone of capital regulation in the following years. In order to maximize profits, banks want to reduce capital-backing for investments to a minimum, because capital is

the most expensive form of raising money for investments. Shareholders will demand risk-premia for their investments because they will be the first ones to lose money when bank gets into trouble. Therefore, equity financing is much more expensive than credit financing. This fact makes low-risk and, thus, low-return investments less worthwhile if they require the same financing structure as high-risk investments that also yield higher profits if they perform. Raising money for financing a mortgage would cost the same as investing into a dubious start-up, but the returns of the latter would be much higher. As a solution without classifying risk top-down, banks could specialize in investments into one risk-class, equity would become cheaper for low-risk banks (they would have to pay lower dividends) and more expensive for high-risk banks, but this almost inevitably leads to a market of lemons-problem where creditors cannot distinguish between risky and relatively safe banks and always have to assume that bank stocks are risky. Furthermore, a function of banks is to diversify risk, but specialized banks rather pool risks which exacerbates financial fragility. Therefore, the Basel Committee introduced risk-weights to adjust capital requirements to the risk of certain assets. This means that a level of capital requirements was defined, in case of Basel I 8% of the investment, and this requirement was weighted by a factor that would adjust the capital requirement to the risk of the respective investment. The risk-weighting scheme was rather simplistic: it treated 'risk-less' assets such as OECD country government bonds or cash with a risk-weight of 0%, slightly more risky assets with 20% risk-weight (such as debts from banks from developed countries), mortgages (50%), and all other assets (100%). This means that no capital buffer was required for investing into government bonds while a mortgage required a capital-quota of 4% (Basel Committee on Banking Supervision, 1988). These simplistic risk-weights raised criticism from both banks and those concerned with financial stability as will be discussed when motivating the switch to Basel II. The system was reformed and revised multiple times but never fully abolished.

One important step in the development towards the current financial regulatory framework was the revision of this risk-weight system away from the initial approach towards more sophisticated modelling including banks' internal risk models and other types of risk than simple credit risks. This meant that risk calculations were made ever more complex and at some point, banks were allowed to use their own risk models to determine the riskiness of assets within certain boundaries (Basel Committee on Banking Supervision, 1996). At first, every spectator who is not a bank lobbyist would regard this as a fundamental loophole in regulation. We will see that internal value-at-risk modelling is heavily criticized as a threat to financial stability. Nevertheless, the case is more complicated. It is far from given that regulators are more objective in assigning risk-weights to assets than banks. Part of a bank's business model is superior

information about risks and there is little reason to assume that regulators are better informed about the real risks of assets than banks. Internal risk models seem to be a necessary result of the general path taken when introducing the system of risk-weights at the first place.

I.3.3.1 Basel II

Just as many other institutions designed in the 1980s, the Basel I framework could not keep pace with the developments of the 1990s that took place in a very different environment. As indicated by its frequent revisions and expansions that often were longer than the initial accord, Basel I was outdated quickly after it could take full effect. The amended Basel I Accord retrospectively became known as Basel 1.5, but patching up a regulatory framework made for a different time could not ensure stability on liberalized banking markets that produced ever more so-called financial innovation and ever greater banking firms. The 1997 Asian Financial Crisis dramatically showed the flaws in the system when former 'Tiger State' economies were shaken by multiple bank failures and the world-economy experienced a major setback.

The solution to Basel I's apparent inadequacy to ensure stability was to replace the patchwork with a new holistic approach on banking supervision and regulation: Basel II (Basel Committee on Banking Supervision, 2004). Not only in size, but also in fields that were regulated in the accord, Basel II exceeded Basel I by far. The number of pages of the accord rose from 30 pages in Basel I to 259 pages in Basel II, which probably illustrates most clearly that Basel II is highly complex in common terms compared to Basel I. This difference becomes even more important when considering that these accords rarely explicitly formulate rules, but they rather provide a goal that would have to be achieved through domestic laws. This means that the implementation of the Basel Accords actually leads to laws and rule-books multiple times larger than the initial accord. While Basel I only covered capital requirements (pillar 1) and their calculation, two other pillars of international banking stability were added in Basel II: the Supervisory Review Process (pillar 2) and Market Discipline through disclosure (pillar 3). The supervisory pillar was meant to consolidate supervision methods and to ensure a minimum standard of regulation across all participatory countries. The third pillar is the result of a belief in market efficiency and the economic wisdom that the shareholder-value approach is superior to all others. Enough transparency would empower markets to constrain banks and avoid excessive risk taking.

However, the first pillar was still the most important one and rules related to capital-requirements and risk-weights account for almost two thirds of pages of the whole accord. This

means that even when deducting the two new pillars, the complexity of the capital-requirements part grew substantially compared to Basel I if we want to use page numbers as a proxy. Tarullo (2008) provides a detailed assessment particularly of these capital requirements in the light of the Financial Crisis and comes to the conclusion that it “may create as many problems as it solves” (p. 190). According to him, the benefits, especially of more sophisticated calculations of risk-precautions, were not well-understood and considerable downsides in terms of effects on competition and procyclicality were to be expected. He also already outlines that the new mode of calculation capital is “full of opportunities for bank and national supervisory discretion” (p.189), which is the central theme of this book and will be picked up later.

Basel II was negotiated in a very different environment than Basel I. First, Basel I was predominantly meant to create a level-playing field for global banks vis-à-vis apparent competitive disadvantages especially for US and UK banks in an unregulated world economy. Important partners of the US should be pressed into committing to limit advantages for their banks from domestic regulation and their domestic banking structure (Kapstein, 2006; Singer, 2007). It was a surprise that the Basel standard got adopted by many third-party countries and became a global standard, a certificate for a sound banking system (Pattison, 2006). Basel II, in contrast, was clearly meant to set the standard for truly global regulation and financial stability measures.

Second, the world of 1988 when Basel I was published was very different to the world of 1999 to 2004 when Basel II was negotiated. In a cold war environment, Western international negotiations were relatively clearly arranged around the US as the dominant pole while negotiations later became much messier. No dominant actors or alliances could prevail, plenty of interests had to be taken into consideration.

Third, as Reinhart & Rogoff (2009) argue, there are always developments within the financial sector or from outside that might lead to the perception that much has changed since the last crisis. This perception then results in the ambition to make rules fit to these new developments. In times of financial innovation (such as the 1990s and 2000s), this means adjusting regulation to this innovative environment. Some states explicitly demanded changes to adjust rules for their most important banking actors. For example, the US pushed through benevolent rules for their investment banks (see e.g. Posner, 2009, p. 673).

These were among the contributing factors that may explain the increased complexity (through many exceptions as well as choices for banks and regulators) of Basel II compared to Basel I. Some scholars also attribute the apparent inefficiency of the regulatory framework to private actor intervention in the process of rulemaking. This means that the explaining factor for inefficiency, complexity, would somehow be the result of a capture of the negotiations by banks or their representatives. The exact mechanism for that remains dubious and I will argue that there probably are better explanations for over-complexity than this.

I.3.3.2 Basel III

The financial stability promise of Basel II was contradicted in the most dramatic way possible at the end of its implementation phase: the Great Financial Crisis started in 2007 and the world saw bank runs, major bank failures, an economic downturn unprecedented in post-WWII times, and whole countries in danger of failing. This failure of banking regulation was mainly attributed to bad supervision practices, bad risk management, and low risk and liquidity buffers (see, for example, Kim et al., 2012). Whether these were the symptoms of a dysfunctional system or the actual reasons for the crisis is up for debate. While many scholars believe that the regulatory approach itself needs revision, regulators came up with a revised version of the existing system: Basel III (Basel Committee on Banking Supervision, 2010a, 2010b).

Core of the new accord were stricter rules in all three existing pillars: capital requirements, supervision, and transparency. This meant strengthening existing rules as well as introducing new instruments. These instruments included among others liquidity ratios, special rules for systemically important banks, leverage ratios, and (in an extension to the initial framework, called Basel IV by some stakeholders) restrictions on the reduction of risk-weighted capital requirements through the use of internal risk models compared to the Basel standard approach (Basel Committee on Banking Supervision, 2010a, 2010b, 2017a).

The most important new rules since the Great Financial Crisis include (they will be examined in more detail in the case study on European implementation of Basel III in chapter IV, this is just a summary):

Liquidity ratios are supposed to ensure short-term solvency; even if a bank has enough capital buffer to avoid insolvency, it might still face problems if it cannot honor its obligations in the short-run due to low liquidity of its assets.

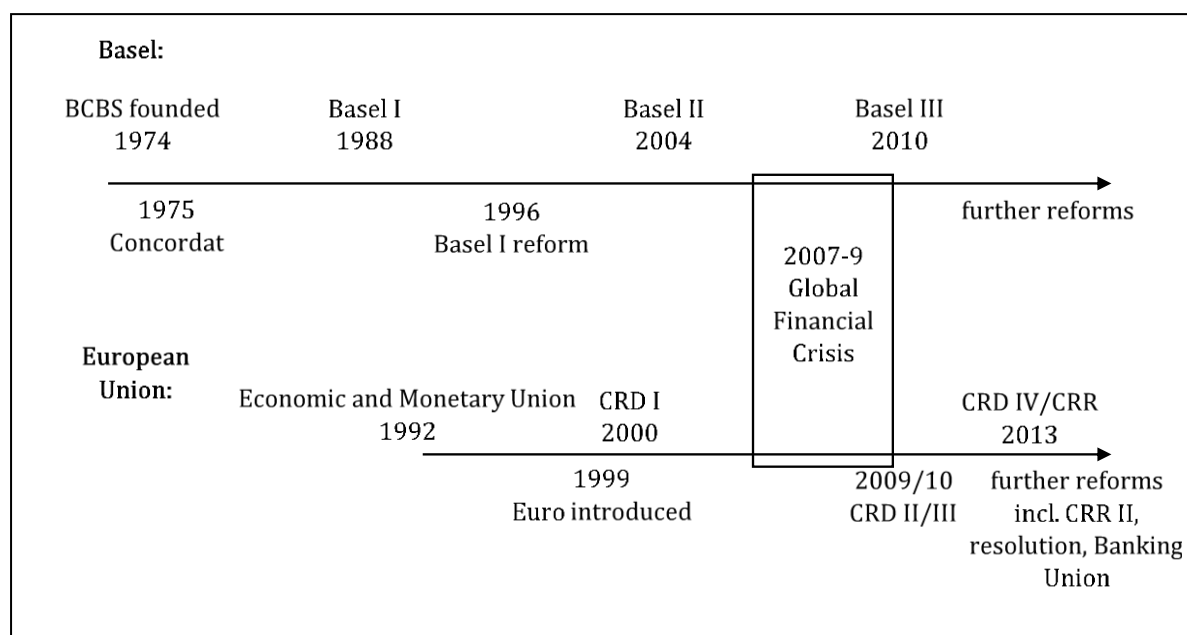


Figure 2: Major steps in multinational banking regulation in Basel and the European Union.

Rules for systemically important banks shall reduce the too-big-to-fail problem that occurs when a bank can rely on being saved by a government in crisis times due to its systemic importance for the respective economy. Such importance potentially results in moral hazard behavior by the bank, losses for taxpayers, and an unwanted subsidy for large banks, because their creditors can expect them to be bailed out in a crisis which reduces risk premia. This would reduce financial stability. A partial solution to this are higher capital requirements for these banks that neutralize the effect of the subsidy, increase stability, and reduce expected costs for tax payers.

Leverage ratios are a first step towards more or less unweighted capital requirements. They simply add a new potential base line for bank capital that only has an effect when all other ratios result in capital requirements below the leverage ratio.

In another extension to the Basel framework and after difficult negotiations an additional base line for capital was introduced: a maximum for reductions of risk-weighted capital requirements through the use of internal risk models compared to the use of Basel standard models (Basel Committee on Banking Supervision, 2017a). Before that, it was theoretically possible that the internal risk models – despite all quality standards for such modelling – decrease a bank's capital requirements significantly.

Many of these new instruments closed loopholes that banks had used to avoid Basel II rules. Therefore, closing loopholes in an already complex accord makes it even more complex in a classic sense of the word, if it widens the regulatory corridor is not clear.⁶ Nobody knows for sure whether the loopholes that were closed represented the gravest ones in the regulatory framework; it is unlikely that they were the only ones and it is even more unlikely that the new rules solve the problem entirely. This is relatively clear from a contracting perspective as a common wisdom of this field is that there exist no perfect contracts. Most often, simple incentive-compatible frameworks are superior to complexity monsters from this point of view. Hence, there is serious doubt about the efficiency of the Basel III framework and its extensions even if it was implemented perfectly in every country. Basel III was already made so complex *ex ante* (before implementation) that it probably has little effect on stability of the system – following scholars who have worked on this extensively (e.g., Barth et al., 2014; Hellwig, 2010).

The Basel arena and its main features will be introduced in more detail in the empirical part when introducing the cases. Yet, it is important to keep the backdrop in mind against which the theory of regulatory corridors is developed.

I.3.3.3 European banking regulation

One special field of international banking regulation is that of European regulation, which is much more hard law compared to the soft law of the Basel Accords. The European Union is an actor that is located somewhere between an international arena and a nation state. It has its own executive agencies and many of its members are part of the Eurozone and share a currency. Member states are also obliged to adhere to common rules and can even be sued if they fail to do so. But decision-making in Brussels is still subject to intergovernmental negotiations.

The EU moved from a loose group of states towards an ever-closer union and that also reflects in its institutions on financial services. This started with slight efforts to increase consumer protection and competition on financial markets and ended with the attempt to create a banking union where all banks face roughly the same rules (deviations from this goal would constitute a regulatory corridor) and are mobile across the continent. Notable events with regard to that are the creation of the Economic and Monetary Union from 1992 onward (including the introduction

⁶ However, this book does not attempt to explain switches in complexity between accords but rather its existence in the first place.

of the Euro in 1999) and the Capital Requirement Directives (CRD) as well as the switch to the Capital Requirements Regulation (CRR) as depicted in Figure 2.

The model and the motivation of this research are largely based on the international level in Basel. However, the regulatory corridors-theory also yields results for the European level and Brussels proved to be a better arena to analyze compared to Basel as its decision-making mechanisms are more transparent. Furthermore, the EU framework includes a number of central players that could be seen as social planners in the sense of the model (this will be motivated further later), which makes it a promising arena to analyze with regard to the model.

In the course of this book, we will dive deeper into the European arena. The empirical section will include a detailed description of the institutional setting in the European Union and its role in banking regulation in chapter IV. Especially cases II and III will apply the model to this arena.

1.3.4 Layers and actors in international banking regulation

The previous sections already indicate that there are two layers of international banking regulation that are important for its coherence: the international stage and the national implementation stage. There is a third stage, the subjects of regulation – banks – but they are not examined in this piece, it is simply assumed that they behave like rational economic actors that exploit any opportunity for arbitrage.

On the international stage, a general regulatory framework is negotiated that consists of fundamental decisions about its design, more detailed standards for its enforcement, and particular rules for ratios or risk calculation.⁷ For example, the international Basel framework in its current form is based on a complicated, complex design based on capital requirements and risk-weights that is supposed to ensure financial stability without harming the economy in non-crisis times. We will see that this approach is heavily criticized by scholars such as Gerard Caprio (2013), Martin Hellwig & Anat Admati (2013), Charles Calomiris & Stephen Haber (2014), and many others and that most proposals for better regulation suggest reducing complexity. In a world without nation states where such an accord would constitute the ultimate rules for banks, the analysis could exclusively focus on this set of rules, the ex ante regulatory framework, but the actual framework only emerges during implementation after the accord is signed – ex post.

⁷ The European framework works slightly differently and will be introduced later.

At the second layer, the implementation stage, the goals formulated in the initial accords are translated into national law. The sum of national implementations forms the actual framework for banks to act in. Diverging national implementations further complicate this regulatory environment while coherent and harmonized laws would result in the opposite. It depends on the coherence of the initial accord how harmonized the international framework of national laws will turn out eventually but also on compliance across signatories. This makes complexity and inefficiency of the international rules not only a problem of direct exploitation of loopholes through banks, but also through indirect destabilizing effects due to diverging implementations. States have a wide range of options when it comes to implementing such soft law reaching from material non-compliance to minor deviations from the accord (in contrast, the EU hard law leaves much less room for differences). The implementation of the first Basel Accord was already not entirely consistent across countries as their institutional frameworks differed (Quillin, 2008). Quaglia (2019) shows that the agreement of an accord, which is often the result of negotiations between technocrats, does not need to coincide with its implementation – even in the states that heavily influenced the accord. Different interest groups might enter the stage domestically and fight the initially envisaged rules together with elected officials as powerful allies within this constituency. This process can decisively influence the eventual regulatory framework. As Quaglia notes, the US – even though being a main contributor to negotiations on Basel II – did not implement it domestically, the EU was later found non-compliant with provisions from Basel III. This might actually add to complexity in the international regulatory regime.

The decisive determinant for different approaches to explain flaws in banking regulation are the assumptions about the relevant actors on different stages. The national stage certainly includes a great number of relevant actors: politicians, the electorate, lobbying organizations, banks, and many others. However, for the sake of simplicity and due to the focus on international affairs in this piece, the domestic decision-making process will simply be regarded as a black-box process that results in general preferences of states *ex ante* and implementation preferences *ex post*.⁸ Somehow, one country determines its optimal point of regulation that it wants to see as the outcome of international negotiations and, after the negotiation outcome is known, it will implement the rules as close to its preferred point of regulation as possible. The only relevant actor is the country representing its national actors.

⁸ Again, Quillin (2008) and Quaglia (2019) could be consulted for a look into such black box processes with regard to banking regulation (their focus is the *ex post* stage though).

More important is the set of actors on the international stage. Are states independent and dominant actors in international negotiations or do some hidden forces steer the accord formation? Some scholars attribute inefficiencies in international banking regulation to high influence of banking associations and globally operating banks on regulators. This strand of literature regards international negotiations as captured by banks (see, e.g., Griffith-Jones & Persaud, 2003; Lall, 2012). Hence, the relevant actors in this view are banks and regulators influenced by these banks. The degree of capture and, hence, the role of regulators or other state actors varies across approaches, but the important point is that banks have a substantial say at this stage. A major actor in this view is the Institute of International Finance (IIF), the international association of banks and its goal is to weaken rules for international finance.

In contrast to regulatory capture approaches, this piece regards the systematic impact of banks on outcomes on the international stage as negligible (not on the national stage though) and states or their regulators as the only dominant actors. This is roughly in line with approaches from Drezner (2007) and Singer (2007) and also with examinations of the influence of private actors on international banking regulation that reject the regulatory capture hypothesis (Young & Pagliari, 2017).⁹ In this state-centric view, banking associations or other private actors can only influence the international stage if they serve the interest of a state actor. The IIF would not have a say in Basel if it did not promote regulation that some important state actors want to push through (note that it might be possible that the IIF formed the interests of state actors on a national stage before, see section IV.5.4). A basic argument that will be made in this regard is that associations like the IIF have little leverage to pressure the entirety (or a greater coalition) of states into a certain behavior. Therefore, states with different optimal points of regulation are the important actors here – represented by regulators. This view will be further motivated in the following chapter that also extensively discusses why regulatory capture theories might not help to explain the issue of complexity.

⁹ Helleiner (2014) also partially adds to this with his examination of post-Financial Crisis regulatory reform. The role of individual states in regulatory reform is a major contributor to what he calls the ‘Status Quo Crisis.’ However, he also discovers a large influence of financial actors on decision-making with regard to making accords weaker. This focus on the actual level of regulation, not its complexity, distinguishes his research from that of this book. The basic arguments used here could also be made using Helleiner’s research but as he puts an emphasis on post-Financial Crisis reform and the others focus more on international banking regulation in general, this book will refer to Singer (2007) and Drezner (2007).

II Literature review: State of the art and blind spots

The big underlying question of this book is how to explain inefficiencies in international banking regulation that have led to past crises and are likely to allow international financial crises to happen in the future. However, this question is too broad even for a series of books. This work focusses on a specific issue with international banking regulation: its complexity.

Three fields of economic literature exist that are relevant for the question of how past international banking regulation agreements, especially the Basel Accords, failed to prevent international banking crises due to high complexity, ambiguity, or – as one might call it – fuzziness. The first relevant field of research covers inefficiencies of financial regulation and criticizes the respective accords due to such complexity. The relevant literature from this strand argues that international banking regulation agreements are overly complex, incomplete, and occasionally even exacerbate financial stability problems. Potential consequences of this complexity are loopholes in regulation both for states and banks. Governments might want to implement rules differently; firms will make use of exceptions in complex agreements as well as of differences in rules across regulatory areas by switching into the most favorable constituency for their respective objective (so called regulatory arbitrage). From a contracting perspective, more complex contracts make it more difficult or even impossible to come to a ‘complete’ solution that results in the behavior intended by regulators. Outstanding examples of those criticisms can be found both in public speeches (see, e.g., Haldane & Madouros, 2012; Hawke, 2003b) as well as research and position papers (see, e.g., Burn, 2017; Caprio, 2013; Gai et al., 2019).

These criticisms form the basis of the entire argument of this book and will be evaluated again in the empirical chapter IV. While ‘complexity’ has been widely criticized, its exact definition in this context remains dubious. A working definition based on the critics’ arguments is provided in this chapter. It essentially defines complexity as the regulatory corridor mentioned before; the wider the boundaries of potential outcomes under a regulatory regime, the more complex it is and the more costly it gets.

The second important field covers potential improvements to the current framework. If there was no alternative to the current rules, it would not make much sense to examine the negotiation process that leads to outcomes that do not sufficiently improve financial stability – there would simply be no other realistic option. Authors in this strand of literature often suggest reducing complexity (e.g., through very simple rules for calculating capital (e.g., Hellwig & Admati, 2013) or fallbacks to frameworks that do not allow for international complexity at all (Dieter, 2015)) and enhancing accountability of banks and regulators (Barth et al., 2012a) such that they would be incentivized to reduce stability-harming features including complexity.

The third field discussed here seeks to explain international regulatory harmonization, the incentives of states to cooperate, and how they affect the outcomes. This section already seeks to make use of former research to explain why the criticisms from the first part prevail even though alternatives exist. Consequently, this part covers the negotiation process of international financial regulation and how private actors might influence or even capture it. Obviously, the outcomes of international negotiations are determined by the negotiations themselves, which is why it is important to evaluate existing theories of how such negotiations might go along.

Within the third field of literature, the probably most prominent attempt to explain such flaws is regulatory capture theory which works with the claim that multinational banks and their lobbyists can influence international negotiations so much that the results become more favorable for them (e.g. Griffith-Jones & Persaud, 2003; Lall, 2012). However, these claims clash with examinations of negotiation processes that came to the result that overall private actor influence was not as strong as suggested by anecdotal evidence (e.g. Young, 2013). Furthermore, it seems unsatisfying to simply assume that regulators willingly collude with bankers against their constituents or that they are tricked into enforcing private actors' agendas. This can be the case but evidence would be needed for that – such as clear connections between industry interests and what is later agreed upon. This narrative also lacks explanatory power vis-à-vis the actual examined problem with international banking regulation: complexity, which is not equal to simple weakening of rules. It might be the case that banks and their associations prefer complex regulation to make use of loopholes and special treatments, but the way of how they are supposed to come to this decision remains dubious and would have to be explored by regulatory capture scholars. It is unclear how different types of banks are supposed to come to a certain common strategy that results in a unified international approach towards influencing regulators. Most of these explanations seem to be rather Functionalist *qui bono*-arguments but the direct theoretical link between complexity and industry influence seems to be missing. Note that this

does not rule out national regulatory capture but this would then happen before negotiations move to the international stage.

Regulatory capture theory is contrasted by more state-centric, Liberal Intergovernmentalist, ways of looking at the regulatory process, which could eventually provide better explanations for its failures. The respective approaches differ fundamentally in terms of relevant actors and this is the crucial point: if we understand the process and its actors, we should be able to understand the outcomes. Based on a review of state-centric literature, I argue that the negotiation process has to be split into two sub-processes: domestic preference formation and the international negotiation stage. Private actor influence on negotiators is very likely to take place on the domestic level when regulators' preferences on regulation are formed; on the international stage, banking associations are influential in rulemaking only if they help powerful state actors to push through their preferences. Hence, the international stage can be regarded as the exclusive realm of states with lobbyists being auxiliary troops. State-centric literature on international banking regulation harmonization is dominated by two books from Singer (2007) and Drezner (2007). Singer focuses on the stability and competitiveness benefits from regulatory harmonization for states. He looks at Basel I where a ruling coalition could implement their preferred rules internationally and others had to comply to this unified regulatory approach if they wanted to stay in the club. Drezner, in contrast, acknowledges that international regulation entails benefits and costs for signatory states and provides a simple game theory model that explains when roughly equally powerful states will agree on binding standards, when they will only create sham standards, or when they might create competing standards. Binding standards mean rules that actually put a burden on actors instead of introducing weak rules that do not change the behavior of those who are regulated.

While both approaches give an idea about how to think about international banking negotiations, they fail to provide a theory for the negotiation process that explains overly complex outcomes. Singer's theory fits more into a world of power politics where a powerful coalition can push through its preferred set of rules without much complexity in it – a Cold War environment. In contrast, Drezner acknowledges that states must be convinced to participate in regulatory harmonization. This means that it is hard to force them into a certain regime – an environment that might come closer to post-Cold War reality – but they have to benefit from a certain regulatory framework more than from any other. His theory seems to be closer to Liberal Intergovernmentalism. However, with regard to banking, his theory loses much explanatory power when considering the empirics of overly complex outcomes; it only allows for all

(agreements among powerful states – club standards – or competing standards) or nothing (sham standards). A complex outcome that actually enhances harmonization, but also leaves room for maneuvering for both states and banks does not seem to fit into the theory. Incomplete contracts and diverging implementations do not necessarily represent club standards or unbinding sham standards. This possibility is left out by Drezner. Both theories provide important insights for the analysis of state behavior in international banking regulation negotiations, but there remains a gap between the empirics of overly complex negotiation outcomes that leave room for discretion for both banks and signatory states and these theories.

Approaches that refer to excessive industry influence seem appropriate to explain simply weak outcomes but the road to highly complex outcomes is not clear. More state-centric approaches provide some insights that go beyond that but rarely treat the nature of an outcome (such as whether it is a clear outcome or a regulatory corridor) as a variable. Thus, they cannot explain the complexity aspect either. Additionally, theories from other fields of regulation that deal with complexity (such as Huber & Shipan (2002)) do not seem to apply. However, this last piece offers a first hint that complexity might actually have its merits as it allows for discretion and flexibility, which might yield welfare-enhancing outcomes compared to non-complex solutions.

The purpose of this book is to contribute to this literature based on the existing criticisms regarding complexity in financial regulation. It will combine the three relevant fields outlined above and later parts will build upon and expand the state-centric explanations of negotiations.

II.1 Inefficiencies in international banking regulation: the problem with complexity

The contemporary literature on how international banking regulation might be inappropriate to address challenges created by financial globalization must be divided into two greater sub-fields: before the Great Financial Crisis and after the Great Financial Crisis of 2007-9 (GFC). The reason for that is simple: before the crisis, the banking regulation framework had to be criticized on a general basis since nobody knew what could be a decisive factor that would prove accords like Basel II inappropriate to regulate international banking. Hence, scholars criticized several parts of the agreements based on economic arguments as well as experiences from smaller international crises. Of course, this neglects all these authors that praised the pre-GFC framework. After the crisis, scholars suddenly had a baseline to refer to: Would rules like those in the Basel

III Accord have been appropriate to prevent the Financial Crisis? In other words, critics of Basel II had to argue that Basel II was not appropriate while critics of Basel III can simply explain why Basel III is not much better than Basel II. They often end with some criticism of complexity hampering financial stability.

II.1.1 Pre-Financial Crisis

Some pieces from pre-Financial Crisis research on Basel were surprisingly accurate in predicting what later turned out to be among the most important flaws in the system – regulators were probably aware of these criticisms. Danielsson et al. (2001) already gave a rather comprehensive analysis of what later appeared to be among the decisive shortcomings of the Basel II framework and, hence, provide a great example for how careful economic analysis could predict shortcomings in the accords. They criticize the reliance on rating agencies for risk assessments as well as that the Basel framework neglected endogenous biases in risk models. Giving some assets better and some assets worse risk ratings at some point of time will affect prices and risk of these assets in the future, which will distort future risk assessments. Part of this bias was and is the procyclicality problem of the Basel II Accord that exacerbated the unhealthy boom before the subprime bubble burst as well as the following bust by endowing risky assets such as subprime bonds with low capital requirements as long as they were stable. This essentially means that the rules themselves had an endogenous bias and could yield widely different outcomes, which is how this book will define complexity. Barth, Caprio, & Levine (2004, 2008) offer an empirical analysis of how banking regulation changed between the 1990s and the mid-2000s, which also leads them to the conclusion that enhanced but complex capital regulations, new internal risk-weighting schemes, and additional powers for supervisors as promoted by Basel II did not help much to ensure financial stability but rather reduced it. Furthermore, Hellmann, Murdock, & Stiglitz (2000) analyzed incentives for banks imposed by capital-requirements, the central provision of the Basel Accords, and find that such requirements are even Pareto-inferior to other prudential regulation measures such as a combination of capital-requirements and deposit-rate ceilings that would actually constrain room for maneuvering for banks compared to the former solution.¹⁰ In a competitive banking market, insufficiently high capital requirements might even have the perverse effect of increasing incentives for banks to gamble, which would reduce stability. Hence, they argue, the construction of the Basel Accords was not appropriate. In

¹⁰ This is a decisive point: more room for maneuvering means that the regulatory corridor is wider, which is associated with more complexity.

contrast to the overwhelming number of negative assessments, especially authors that published for regulators such as central banks drew a much more positive picture of the Basel II outcomes prior to the crisis (e.g. Dierick, Pires, Scheicher, & Spitzer, 2005). It is surprising how little emphasis was put on risk-weighted capital and internal risk models by these authors, problems that were heavily criticized later and are outlined in chapter I.

II.1.2 Post-Financial Crisis

After the Financial Crisis, the flaws of the Basel II regime became apparent and were not just theories anymore; as a result, more literature was published on how Basel II was inappropriate to prevent such crises. Additionally, more and more scholars also assessed the direct crisis responses in terms of banking regulation on national and international levels including the Basel III framework. The crisis had proven wrong all the optimists that praised the Basel framework (also for its complexity, see Kette (2009) – a paper that was probably submitted before the crisis); now the critics of how international banking regulation was done were on top of the debate.

The overarching theme of many pieces that criticize the international regulatory regime and its contribution to financial instability (at least implicitly) is high complexity and the resulting incoherence of Basel II and III. This includes the excessive burden of complex regulation for smaller banks, bad incentives due to risk-weights and their endogenous consequences, accountability issues regarding regulators that have to apply ever-more complex rules, and that complexity harms the ability of private actors to supervise banks (Barth et al., 2012b, 2014; Caprio, 2013). This work is supported by a piece by Haldane & Madouros (2012) who argue for much simpler rules in international banking regulation – also with regard to risk-weights. Additionally, it is evident that the complex internal risk models fail to provide reliable results for tail-events – for example, due to an exogenous shock – and different approaches to risk assessment come to very different conclusions regarding effects of market turmoil (Danielsson et al., 2016). Obviously, competing predictions from risk models will increase uncertainty in crisis situations. A solution that might mitigate such effects would be the establishment of one general risk assessment standard, which would reduce the size of the regulatory corridor banks operate in. As long as banks are left with choices how to assess risk, they can reach these different outcomes and might even choose from a menu of different capital requirements as a result. That can easily harm financial stability.

The view that complexity and too many exceptions make the Basel framework inefficient is also supported by Daniels (2017) in a piece that rather looks at the implementation of rules. She focusses on the country-level and the transfer of international agreements into national laws and criticizes delayed implementation and the excessive use of exceptions for certain types of banks. Following this argument, incoherence is not only a problem on the international stage, but also when it comes to domestic implementation. This further increases the complexity of the overall international system and opens avenues for regulatory arbitrage. Furthermore, Burn (2017) explicitly points out that more complexity leads to more regulatory arbitrage by banks.

In an attempt to holistically assess the post-crisis stability of banks, Bell & Hindmoor (2018) also argue that, among other things, the complexity of regulatory arrangements is problematic since this might result in “[... them being] gamed, reversed or watered-down.” (p. 2).

Additionally, very recent publications by the European Systemic Risk Board explicitly put regulatory complexity in relation to financial instability:

“[C]omplex frameworks may provide regulated entities with multiple opportunities to game the system and stronger incentives for regulatory arbitrage and for the transfer of activities beyond the regulated perimeter, potentially creating further systemic risks.” (Gai et al., 2019, p. 20).

These assessments by practitioners will be more closely examined in the empirical part.

It seems to be a fair conclusion of this overview that complexity is one of the great contributors to inappropriateness of financial regulation and that this was pointed out by scholars prior to the Financial Crisis as well as afterwards. A very important point here is that in negotiations, both before and after the Financial Crisis, regulators probably were aware of such criticisms and must have taken them into account when agreeing on rules. This leaves only a few explanations for the existence of such complexity: (i.) no better, less complex solutions existed such that they had no choice (a claim debunked in the next section and in chapter IV), (ii.) they deliberately ignored the costs associated to complexity, which would play into the regulatory capture argument evaluated later, or (iii.) they had reasons to include complexity in the accords as the cost were outweighed by benefits, which is the greater argument of the regulatory corridors-theory.

Aside from financial stability considerations, complexity obviously has multiple other costs attached. A more complex framework needs more maintenance, it needs more capable

supervision agencies and larger compliance units in banks. All these are important factors to take into account as well but they are so straightforward that the focus here should stay on financial stability considerations.

Despite the fierce criticisms, it remains unclear, what the complexity that these authors are referring to actually is. Certainly, nobody would complain about an accord just because it consists of many pages (the simplest measure for complexity) but critics rather aim at something more abstract subsumed under the term complexity. As a first step to developing a theory that explains the emergence of such complexity, this book will develop a working definition on complexity in chapter III.

II.2 What could reduce complexity costs?

All these criticisms would not mean much if there were no alternatives. One could simply say that banks are complex entities and these entities require complex regulation. This way, the investigation of regulatory complexity would end here as it would simply be naturally given that it looks the way it does. Criticisms of such regulation would be like complaining about the weather: no matter how much people moan over the cold, it will not be a degree warmer because of that.

Yet, plenty of proposals exist how banking regulation, and the Basel Accords in particular, could be improved. Of course, pieces on this topic criticize current regulation as well (otherwise there would probably be no need for new rules), but the focus lies more on possible ways forward. A literature with very specific proposals on how to improve Basel regulation emerged after the Financial Crisis and regulators certainly were familiar with at least some of these suggestions when negotiating Basel III. Yet, regulators preferred to stick to the old system including much criticized features such as weighted capital requirements instead of totally changing their regulatory approach.

The most far-reaching and probably least realistic proposal in this list is the 'Balkanization of financial markets' (Dieter, 2015) which means re-establishing capital controls and let every country do its own regulation without risk of contagion across countries. This is clearly a provocative suggestion that is meant to start a debate about whether capital flows should be controlled as it was the case after the Second World War and before the liberalization of financial markets from the 1970s onwards. Given the international consensus that capital flows should not

be restricted, it is obvious why regulators did not choose such an option. Still, one must point out that having an international regulatory regime for globalized capital (and thus financial) markets is a choice and states seem to prefer this system. They seem to profit from non-Balkanized financial markets.

Other authors accept globalized financial markets and suggest regulatory frameworks that would rather improve the current architecture – they mostly follow a path that was determined in the 1980s when Basel I was negotiated (see chapter I). Their suggestions include much higher capital ratios that would contribute to stability and make bank capital a normal asset with modest returns due to lower risk premia (Hellwig, 2010; Hellwig & Admati, 2013) as well as demands for changing capital-requirements to publicly observable cash-requirements (Calomiris, Heider, & Hoerova, 2015; Calomiris, 2011). Others do not at all deviate from the current regulatory framework, but suggest establishing an authority that supervises regulators since they did not function as intended prior to the last crisis and assessed banks vastly differently (Barth et al., 2012a; Levine, 2012) or suggest a number of smaller improvements within the current framework (Calomiris, 2009). Furthermore, Caprio, D’Apice, Ferri, & Puopolo (2014) provide evidence that undistorted interest rates (no government intervention steering interests) and the opportunity for non-state actors to monitor banks were factors that were correlated with more banking stability during the Subprime Crisis. This means that a clear price signal and, thus, market control that affects all banks equally would help to reduce instability – a claim that is in line with arguments for a strong pillar 3 in regulation. In general, almost all these contributions call for some sort of reduced room for maneuvering for banks or national regulators and equal treatment for banks such that market forces can regulate them together with institutional regulators.

All this supports suggestions for simpler and more transparent rules for banks. Lastly, almost all authors mentioned here suggest that (internal) risk-weights for assets should be reformed or abolished – a fundamental feature of current regulation that makes it way more complicated and probably a major contributor to unhealthy developments on international financial markets in the past. This is a crucial suggestion as risk-weights are a central feature of contemporary regulation. The entire regime of internal risk assessments that determine regulatory capital is overwhelmingly complex and full of legacy-issues such that it is difficult to assess its emergence but this dissertation will go into a sub-category of risk, operational risk, where a similar approach was introduced in Basel II for the first time.

Of course, this overview covers just a subset of all suggestions for better regulation, but a general pattern emerges when reading these papers and books: to some extent all authors propose reducing complexity and enhancing accountability of regulators and banks. This can be broken down to clearer and 'harder' rules to reduce room for maneuvering for banks and national supervisors/regulators to change regulatory outcomes. Nevertheless, Basel III has been made even more complex than Basel II. Consequently, states must face incentives to ignore these renown scholars who deal with financial regulation. The rest of this chapter is about how this perceived ignorance of (potentially) better alternatives might emerge and why existing theories do not suffice to explain it.

II.3 Theories on negotiation processes and implementation

As argued before, many researchers who work on international financial regulation blame complexity of such rules as one of the main reasons for its inefficiency and its failure to prevent banking crises. The rules do not seem to be too weak in general; they are too incoherent to become as strong as they sound at first. This remarkable outcome is rarely considered by researchers who attempt to examine the negotiation process of financial/banking regulation. Most scholars in this field try to explain why and how states agree on international standards without considering the nature of the eventual outcome of the negotiations. Furthermore, most critics of complexity in international banking regulation do not even mention a particular mechanism that could cause what they criticize. In other words, they do not take into account the process of why regulators do not adhere to their proposals. Hence, there is a missing link between research on the negotiation process and the empirics of its outcomes. The outcome of banking regulation negotiations rarely is a comprehensive treaty; it rather is a complex framework of rules – a regulatory corridor – that could be made more efficient at first glance.

II.3.1 General assessments of the nature of international banking regulation

From a contracting perspective, states should realize potential efficiency gains from superior regulatory proposals, but they do not. If we assume that states and their regulators act rationally, (overly-)complex outcomes can only mean that states face incentives to deviate from simpler proposals made by researchers. Complex treaties could be simply better for states or their representatives or complexity is a result of non-cooperative bargaining – similar to a classic prisoner's dilemma where rationally acting players reach suboptimal outcomes. Another

explanation could be regulatory capture, which is assessed later. The key to this puzzle probably lies in the basics of international regulation.

States most likely have different preferences in terms of banking regulation and their optimal levels of regulation are often not aligned (Cassis, 2017; Klomp & Haan, 2012). Rosenbluth & Schaap (2003) even trace back differences in regulatory preferences to different electoral rules. Others see financial regulation as part of a policy-mix such as monetary or fiscal policy whose implementation depends on the needs of the respective constituency (e.g. Fratianni & Pattison, 2015; Quillin, 2008; Schimmelfennig, 2016). Such fixed (in constitutional rules) or dynamic (as in the sense of individual fiscal, monetary, and regulatory policies) differences across countries as well as other institutional and structural pre-conditions might influence regulatory preferences even without any interference of other forces but domestic players and states. International negotiations are about resolving these differences in preferences through harmonization of rules. The regulatory corridors-theory makes extensive use of the fact that states' preferences in regulation diverge.

It would be too simplistic to say that states whose preferences differ just agree on a simple lowest common denominator compromise. This might be the case in some sub-fields of banking regulation; Rixen (2013), for example, argues that the regulation of shadow banking markets is merely a sham standard and, thus, a smallest common denominator compromise. However, this seems to be an exception and especially the Basel rules enhance regulation for many (non-shadow) banks to some extent in most states. As the history of banking regulation agreements illustrates, mutual preferences for complex (and thus potentially inefficient) agreements are rather unlikely. There has always been the desire to make regulation efficient but what efficiency entails is not that clear. See, for example, chapter IV which examines how different entities discuss how to reach efficient regulation.

The actual purpose of negotiating bank regulation standards at the first place was to improve financial stability multilaterally. The establishment of an international framework, Basel I, which imposed stricter rules on banks was attributed to the fact that it was 'consensual knowledge' that bank capital was too low to prevent crises (Kapstein, 1989). The leading economies of that time had to coordinate on enhancing banking standards to protect their economies from devastating crises and to keep the financial heart beating without risking overregulating their domestic banks compared to their international competitors. In other words, states had to create a common level-

playing field for their banks¹¹ on a higher level instead of improving regulation unilaterally and harming their national champions in banking. They wanted stricter regulation and no sham standards. The particular form of this international solution was then subject to classic power politics, especially by the United States and Great Britain, but also other major countries such as Germany and Japan. The latter two already pushed through some exceptions for their local universal banks that led to more complexity in the accord. Still, Basel I rather was a product of Anglo-American power, as we will see in more detail later, but it set the path for future agreements on banking regulation.

Basel I still has its importance when assessing contemporary international banking regulation due to path dependency effects. Therefore, it must not be forgotten when assessing international financial regulation. Newman & Posner (2016) argue that the general pattern of how international finance is regulated has been influenced by the first move made by the US and the UK in the initial Basel negotiations and that this influenced states' preferences in the Basel II and III negotiations. This influence includes the establishment of risk-weights for different types of capital that are still a crucial and highly criticized part of the Basel framework. Indeed, we see that the minor complexity problems of the Basel I framework became much worse in later accords – as already indicated by the size of the agreements (Basel II had 11 times, Basel III 20 times the number of pages of Basel I to provide a very basic indication) – and that most of the complexity problems have their origin in rules that were part of Basel I or its amendments but became much more detailed (and not only stricter) than in the initial accord. We will see that researchers have worked out how the international political landscape might be an explaining factor for differences in the accords. While Basel I was more or less the result of power politics, later Basel Accords had to be negotiated among equally powerful players.

Aside from path dependencies, that certainly play a role in how financial regulation is conducted nowadays, two very broad strands of literature exist that attempt to explain how international banking regulation is negotiated, but they do not provide convincing arguments for the flaws and loopholes based on the complexity problems mentioned before as will be argued below. First, a one strand of research focusses on private-sector involvement in rulemaking, so called regulatory capture. The argument is that shortcomings in international financial regulation are caused by

¹¹ This is still an important goal of regulatory harmonization but the focus might have shifted.

private actors having so much power over the regulatory process that they can significantly influence rulemaking in a way that benefits them and transfers costs to society.

Second, state-centric literature rather focuses on negotiation problems between states that have diverging interests in financial regulation. The state-centric literature sees states and their regulators as the dominant actors in international regulation, but it does not rule out private-sector influence. States' preferences are determined on the domestic stage and the eventual international regulatory framework is then negotiated on the international level.

II.3.2 Regulatory capture

An important strand of literature when it comes to explanations for shortcomings in the Basel Accords (that probably also reflects the dominating public perception of why regulation does not work) is based on regulatory capture theory. Regardless of whether they have been published after negotiations for Basel II (before the Great Financial Crisis) or Basel III (after the Crisis), the proponents of this reading of the negotiation process argue that regulators in Basel were directly or indirectly influenced by the banking industry when negotiating the respective framework and that this influence led to weak outcomes.¹² Griffith-Jones & Persaud (2003) claim that banks and banking associations had high incentives to distort the Basel II negotiations and did so through a 'capture of minds' based on their superior expertise and their greater endowment with resources to develop regulatory concepts. This is supported in a piece by Kette (2009) who confirms a high degree of cooperation between bankers and regulators in the process leading to the Basel II arrangements. However, he sees this cooperation less pessimistic and argues that it fostered acceptance of rules among banks – which is of course not a contradiction to Griffith-Jones & Persaud's claim. It remains a matter of politics whether it would be good to use regulation as a device to restrain banks or to work with them or both.

In a fundamental critique of international banking regulation, Lall (2012) argues that large banks had much influence on regulation concerning themselves and their smaller competitors due to early involvement in the process. He builds on work from Mattli & Woods (2009) who focus on vested interests as a condition for regulatory capture on an international level. Lall adds a temporal dimension to that and claims that important banking associations and large banks had strong influence on the Basel II negotiation process due to their ability to comment and revise

¹² This argument is again very much focused on Basel but similar arguments apply to Brussels.

proposals at very early stages. He traces these advantages for special actors back to personal relationships between regulators and these actors; for example, he refers to former central bankers who then became lobbyists for organizations such as the Institute of International Finance and allegedly shaped rules on internal ratings (a special case of risk-weighting where banks can use their own models to assess risk) themselves. Other similar assessments such as the 'revolving door' described by Barth et al. (2012a) rather focus on regulatory capture and collusion on the national level and not so much on Basel and other multilateral accords. Generally, these investigations contribute weak outcomes of negotiations to regulatory capture of some sort but this could also be a reason behind the complex regulatory outcomes that were discussed before.

When assessing the possibility of regulatory capture on the international stage from a more theoretical point of view and with special regard for the outcome of complexity, it is hard to spot a clear mechanism how it should affect regulation in that sense. That even applies if we assume for the moment that complex regulation makes regulation weaker in general. Compelling systematic evidence that is not solely functionalist seems difficult to find in this shadowy world of international lobbying. This critique can be supported by Young's (2012; 2013) assessments of the Basel process that systematically examined private actor influence on the Basel negotiations. He demonstrates that even though private actors had great access to the Basel negotiations, there is no pattern of their influence resulting in weaker rules. Sometimes they were successful in lobbying, sometimes they were not, and sometimes regulators even made rules stricter after noticing enhanced interest by banks. Indeed, it appears to be far too simplistic to speak of regulatory capture only based on the existence of some cooperation between regulators and the industry. There is little doubt that especially large banks and their associations have preferential access to the negotiations on the international level and that they can influence certain decisions, but the extent of this is unclear. Furthermore, states might face incentives to weaken rules for their domestic banks due to domestic politics or free-rider dynamics. The boundary between banks capturing negotiations and states simply enforcing their preferences (that include supporting their domestic industries) is blurry. The question of who controls who is important here: can lobbyists succeed on the international stage by influencing countries to act against their own interest? Can they either collectively influence a crucial number of states or can they simply capture the international arena completely and introduce their own preferred rules? This seems dubious given the work by Young and the question of why lobbyists would make the regulatory framework so complex if they could also simply move the compromise towards

weaker standards remains unanswered. These questions will be subject to empirical investigation later in chapter IV, especially in case I on operational risk treatment in Basel II.

However, it might be possible that negotiations are not directly captured but that private actors simply find themselves in such a favorable position that they can trick regulators into certain behaviors in some fields. Preferences of rule-makers might be influenced by private actors due to superior knowledge, greater resources, or other advantages over regulators. In a piece that concerns legitimacy of international financial regulation from the perspective of a global public, Underhill & Zhang (2008) provide an explanation for enhanced influence of private market actors on international rule-making based on their position in the international framework. According to them, financial globalization led to a mismatch between globally operating banks and regulators restricted to their domestic borders. The latter can regulate internationally operating banks only by coordinating with other regulators. This gives them a fundamentally weaker position vis-à-vis business interests and they have to rely on business actors to get a complete picture. Additionally, Kette (2009) argues that business involvement in rulemaking enhances legitimacy among those who are regulated and the likelihood that the respective rules are followed, which goes into roughly the same direction. Lastly, in order to find a mechanism how regulation might be influenced, Tsingou (2015) proposes a theory of a diffusion channel of academic ideas and business interests in regulators' minds and into some specific regulations: club governance and transnational policy communities. Such clubs (in this case the G-30 group that consists of high-ranking representatives of regulators, banks, and research institutions) have a significant impact on international rules by distributing ideas among members who then transform these ideas into guidelines of their everyday policies. Hence, business interests might diffuse into regulation via these groups. Regulators who seek appreciation by their peers might be willing to implement rules that are promoted by these groups. Why these groups should promote complexity remains dubious though.

To make this clear, none of these explanations directly refers to complexity directly but either to abstract potential problems that come with industry involvement or particular direct issues with banking regulation. Yet, when asking why some international banking rules are inefficient, regulatory capture is likely to be among the most popular answers when people had to estimate.

Even if we accept explanations how banks might have advantages over regulators as reasons to believe in some kind of regulatory capture, they do not provide the smoking gun that shows the mechanism how regulators might agree on rules that reduce welfare for their constituencies (as

abstract entities and including banks) – especially not for welfare losses due to potentially exaggerated complexity. Instead, they rather explain how ideas about regulatory frameworks emerge. There is no obvious mechanism that leads from capture of the negotiation table by internationally operating private actors to the inefficient outcomes described in section II.1. There is not even a mechanism provided how private actors could make use of their potential advantages after the phase of idea formation. If we exclude outright collusion on the international level, little explanatory power is left on why states should agree on highly complex regulation due to some concerted international lobbying effort. As Tsingou (2015, p. 230) states it: “these approaches do not always tell us enough that can specify the particular actors, their individual motivations and the devices that lead to agreement on a given policy program.”

A completely different matter would be regulatory capture on the national stage. It is possible that banks and their lobbyists get so powerful in one country that they can influence the regulatory preferences of this country. But in combination with assessments from the coming section, it seems fair to rule out that one state (and thus potentially one lobby) could capture the international process and could be the reason for complexity.

It cannot be denied that regulatory capture scholars have a point on private actor influence, but it seems appropriate to look at the mechanisms how some private actors might influence the negotiations in more detail. In the next section, I will do this and examine pieces that might provide a more careful analysis of how preferences (and, eventually, negotiation outcomes) are formed on different levels. A more application-based discussion of this can be found in Quaglia (2019). Chapter IV will also further investigate the empirics of the regulatory capture argument in this specific setting.

II.3.3 A better explanation for private actor influence on rulemaking and state preferences: the formation of state-preferences on the domestic level

A connecting theory between regulatory capture arguments and approaches that still acknowledge the prominent role of regulators and states in international rule-making might be provided by Calomiris & Haber (2014). They attribute domestic regulatory policy to ruling political coalitions who shape the nature of the respective banking system. These coalitions can favor current bankers, which would be the case if these bankers were influential in politics, or foster market entry of other kinds of actors if they are closer to the coalition. Calomiris & Haber’s

work finally suggests a mechanism on how and why public-private cooperation (or even collusion) influenced banking regulation and potentially reduced total welfare. Politicians and regulators that depend on them had incentives to collude with bankers for the sake of a societal group that was represented by the politicians or even as direct beneficiaries of such collusion. Their utility is higher when they collude with bankers instead of maximizing welfare for their country as a whole. That said, the implicitly mentioned mechanism of direct or indirect corruption or rent seeking from other regulatory capture arguments certainly can be subsumed under this coalitions theory.

Preferences of states on domestic but also international regulation do not need to depend on the objective institutional setting in a country or its objective welfare function (if such thing existed) but on this ruling elite. As soon as a coalition is formed, it might influence domestic regulatory policy. As, for example, Markgraf & Rosas (2019) show, close ties between politicians and some banks in Germany have an effect on re-election prospects of these politicians such that they should be interested in a benevolent regulatory environment for these banks. Similar connections exist elsewhere up to the phenomena described in the previous section. This does not necessarily mean that regulation gets bad and there still is no connection to the issue of complexity (banks would probably rather have weak rules) but it hints at industry involvement through connection to an elite that then forms a ruling coalition with the banks. Additionally, Quaglia (2019) shows that compliance with Basel standards often was harmed by the two-level nature of the game: technocrats agree on something in Basel, elected officials and interest groups then might change the implementation of the agreement on the domestic stage. Thus, state-preferences might change throughout the regulatory process.

Such a defined elite that might collude with banks does not necessarily exist on a global level; politicians and regulators depend on their local constituencies and the respective interest groups there – only in exceptional cases they might depend more on global actors. Multinational banks might be able to push through their regulation preferences domestically if they can pressure politicians and regulators. For example, Deutsche Bank might threaten the German government with moving its headquarters to London if Berlin does not reduce regulatory burdens. In contrast, they have little power to pressure international negotiators in their entirety into agreeing to their demands – it seems dubious how banks and their associations should do that. They might have certain advantages vis-à-vis public actors as mentioned before, but is it really a likely scenario that regulators are not aware of their position and can simply be tricked by banks? As argued before, this seems to be a far-fetched claim.

This would have been the first real theory of banks having a decisive influence over *international* negotiations that might result in complexity: a strong influence on a governing elite on the international level. But that would require the existence of such an elite instead of a diffuse framework of countries with diverging preferences. As we will see in the next section, a ruling elite might have existed in Basel I through the governments of the dominant powers USA and UK but chapter IV will show that such dominant powers do not exist anymore and lobbyists would have to influence multiple governments simultaneously.¹³

This leads to the remaining possibility that banks and their associations are better than states in coordinating their efforts and pressure individual rule-makers domestically into following a certain path in international negotiations to obtain a certain goal. However, this would require common objectives of the respective dominant national banking actors. Even within the OECD¹⁴ countries – that might be regarded as the group of important players in international banking regulation – banking sectors are organized so diversely that such coordination seems highly unlikely. It would be surprising to see concerted action of French multinationals and German savings banks (whose preferences would probably trump those of Deutsche Bank due to their close links to domestic politics). Regulatory capture on the international level through the backdoor of influencing national rule-makers simultaneously seems to be as unlikely as direct regulatory capture of the non-existent ruling elite. It would simply run into the same problems as states with diverging preferences.

What we can derive from Calomiris & Haber's (2014) assessment for the international arena is that states' (or politicians' / regulators') preferences might very well be influenced by private actors on the domestic stage. State representatives and their bankers might form a symbiosis – sometimes against the interests of their domestic publics. This probably accounts for some of the observations made by proponents of regulatory capture theory; a banking association that can influence US politicians and regulators probably also influences international negotiations through this channel. Nevertheless, these two spheres are fundamentally different: the domestic stage is subject to political struggles, politicians have to care about preserving power, banks have leverage to pressure politicians and even regulators into some behaviors. The international stage, in contrast, follows different laws and whether one is a Functionalist or a Liberal

¹³ Both potential regulatory capture arguments are also depicted in figures in chapter IV.

¹⁴ Organization for Economic Co-operation and Development – a group of mostly developed countries.

Intergovernmentalist, states are the dominant actors and the negotiation outcomes result from power struggles between these actors represented by their respective officials.

Hence, private-sector involvement is a crucial part of how banking regulation is conducted and banks influence states' positions and preferences, but this probably happens on the domestic level. French investment banks certainly pressure the French government into forming certain preferences for international negotiations and they might even be able to influence other governments in a similar way. German savings and cooperative banks will influence German politicians into forming different preferences that rather benefit smaller banks. These preferences clash on the international level. This is basically a description of an international banking regulation version of Putnam's (1988) two-level games approach. This theory suggests exactly such a distinction between the domestic and the international level. According to the two-level games theory, preferences of states are first determined on the domestic level and the relevant domestic actors agree on a 'winning set' of acceptable international negotiation outcomes. An international agreement can be reached if the participatory states' winning sets overlap and the outcome will lie somewhere in the overlapping area. Many pieces that use negotiation theory or game theory for examining the process of regulating international finance implicitly or explicitly use this logic of two-level games.

This theory of public-private coalitions on the domestic stage would reconcile most observations made by regulatory capture scholars with the assumption of rationally acting regulators that serve the interests of their domestic stakeholders (without saying who the most important stakeholders are). Following this logic, regulators let banking associations and other industry representatives join the table and influence rulemaking on the international stage because they are auxiliary troops for their domestically formed interests. The Institute for International Finance (IIF – a group of multinational banks) might only be so powerful in Basel because it serves the interest of powerful state actors. An alliance between banking lobbyists and states (and their regulators) might rather be a mutually beneficial cooperation instead of a capture. I will come back to this idea later, when looking at state-centric approaches and the possibility that states simply use international private actors to support their demands.

Such mutually beneficial cooperation between private and public actors can be observed in the EU – an intermediate case between the domestic and the international level. Christopoulos & Quaglia (2009) examine which actors, especially banking associations, had most influence on the legislative process of the first EU Capital Requirements Directive (CRD), the most important

implementation of the Basel II Accord into European law. The EU Commission itself invited banks to comment on the CRD-proposal and it even encouraged banking associations to form a common position. Regulatory capture theory usually argues that banks and banking associations work together to better influence rulemaking. Following Christopoulos & Quaglia, it was – at least in this case – the other way around: the EU actively approached banks and even encouraged them to create an entity that could present a consolidated opinion. This hints more at a management of lobbyist and involvement in the sense of profiting from expertise and enhancing legitimacy among those that are regulated. It is at least doubtful that oblivious regulators were outsmarted by banking association with more power and resources. This argument is in line with results from interviews in chapter IV.

II.3.4 State-centric approaches explaining the negotiation process

This brings us to purely state-centric approaches that explain the nature of international cooperation in banking. They have to be examined more carefully, because they explicitly cover the international stage (in contrast to most regulatory capture theories) which also is the more important level for the theory in chapter III. This strand of literature mostly focuses on the incentives states might have to coordinate regulation on the international level. Clearly, this is the best starting point to set up a theory for failures in the system that relies on rationally acting states; it is important to understand why states cooperate at the first place instead of implementing their preferred regulatory scheme unilaterally. Two books lay the groundwork for such an analysis and both were published shortly before the Financial Crisis. David Singer (2007) investigates how states benefit from cooperation in terms of economic stability and competitiveness of their banks. Daniel Drezner (2007) rather uses a cost-benefit analysis of coordinating regulation among states to explain different kinds of international regulation. While these two approaches are highly useful in terms of defining the relevant actors in international banking regulation negotiations, they lack explanatory power regarding negotiations in a multipolar environment where the greater powers have diverging interests. After explaining the two approaches in more detail, I will present research which indicates that multipolarity and diverging interests between the respective poles actually are characteristics of the current banking regulation environment.

II.3.4.1 Singer: international cooperation as a way to react to shocks

Singer (2007) focuses on the benefits from regulation for states as entities including their banks while the mechanisms he describes rely on unipolar power politics. He goes deeper into the process that makes regulation desirable for states than those who promote regulatory capture theory. This is important for a careful assessment of the situation states find themselves in when deciding to cooperate with other states – it lays the groundwork for regarding states as players in a bargaining game and it demonstrates how conflicting preferences in banking regulation might emerge across states. It also proposes an explanation for how negotiation outcomes are determined – and, hence, a possible solution for the puzzle why states might agree on complex rules. However, in his work, he rather focuses on the Basel I process and his model is probably less suitable for explaining negotiation outcomes in a multipolar world.

Singer describes a dichotomy between stability and competitiveness in financial regulation in a two-level game model in a world of power politics and with one dominant coalition. In an international setting, more stringent domestic regulation of the financial sector enhances stability but also reduces competitiveness vis-à-vis foreign players and vice versa. This trade-off can be mitigated by international regulatory harmonization if it cannot be resolved unilaterally (at the domestic stage of this game). In case of shocks to stability and/or competitiveness, international regulation might provide a feasible way out of instability without closing borders for foreign competitors and their capital. In a case study on international banking regulation in the 1970s and 80s – Basel I and its predecessor, the Concordat – he works out the shrinking domestic room for maneuvering for US and UK banking regulators in an environment of reduced financial stability and rapidly growing competition by foreign banks that faced laxer regulation; especially banks from Japan which were usually organized in giant conglomerates with other firms and enjoyed small capital requirements. Japanese regulators did not see any need for more prudent regulation of their banks that were backed by their partner firms in case of emergency. US and UK banks, in contrast, did not have this backing and had to be regulated in a more stringent manner. The optimal levels of regulation were not aligned and Japan as the second most powerful country based on market size refused to abide to the rules proposed by the US. Eventually, the two Anglo-Saxon countries formed a coalition and used their market power to force Japan and other countries into accepting the Basel I regulatory framework which constitutes an extreme case of Drezner's (2007) model of international regulatory cooperation (see next sub-section). Singer's detailed case study ends with the agreement on Basel I, but in an epilogue, he also briefly covers the Basel II negotiation process. While clearly being unaware of what was about to come

in the years following the publication of his book, he already acknowledges that Basel II constitutes a “decrease in regulatory harmonization” (p. 65) compared to Basel I. This is in line with the criticisms on why Basel II failed to prevent the Financial Crisis.

Singer uses his model to explain this move towards the more incoherent, more instable Basel II framework by pointing at the remarkably stable banking environment in the US and the UK prior to the Financial Crisis which reduces the need for international cooperation based on his model. It is tempting to believe this argument which seems to be closely related to Minsky’s Financial Instability Hypothesis (FIS). The FIS predicts that long-lasting stability on financial markets makes market actors overconfident and leads to ever riskier and more unsustainable investment decisions until a ‘Minsky Moment’ happens and investors become aware of the Ponzi scheme they are trapped in. In terms of banking regulation, this would mean that regulators who negotiated Basel II suffered similar overconfidence in the stability of financial markets as the bankers they were regulating. This would have resulted in weaker rules due to too much trust in the persistence of financial stability.¹⁵ Unfortunately, this explanation does not fit anymore when taking into account the similarly incoherent nature of Basel III which was negotiated in a phase of high instability. Basel II and III differ fundamentally from Basel I, especially regarding the negotiation environment.

Apparently, Singer’s model explains state preferences and how they lead to banking regulation in the Cold War environment of Basel I, but not in a multipolar world. His simple model of states forming preferences and pushing them through is appropriate to explain the eventual outcome when dominant players’ preferences are aligned and they impose these preferences on weaker players as a result of power politics. In the 1980s, the US, the UK, and Japan certainly were among the dominant powers in economic terms and Japan heavily depended on the US market. This led to the situation that the US and the UK could force the rest of the world including Japan into their preferred framework. In contrast to this, Basel II was the product of real negotiations whose nature fundamentally differs from the Basel I world as will be discussed below. The inappropriateness of Singer’s winning coalition-approach for analyses of the current multipolar environment becomes clearer when looking at the problem from a slightly different angle.

In a contribution for the Bank for International Settlements (BIS), Ethan Kapstein (2006) already outlined parts of what Singer later modelled in his book: international regulatory cooperation is

¹⁵ Proposition 3/corollary 1 of the model in chapter III are related to that.

not only about enhancing stability in a globalized world, but it is also a measure to create a level-playing field for banks that face international competition and, thus, to protect the local banking sector. Kapstein argues that stability and competitiveness can be regarded as two sides of the same coin; regulators have to reconcile different interests – in the best case in a way that is welfare maximizing for their respective public. Parts of this public are banks as well as stakeholders who depend on banks. Exaggerated stability measures can easily lead to a credit crunch and disproportionately harm the economy. Many other economic stakeholders even support their domestic financial sectors' interests and lobby for more bank-friendly rules (Young & Pagliari, 2017).

This leads us to an important stage of the process that has only been mentioned implicitly so far: implementation of the accords on the national level. Regulators do not only form preferences before they go to Basel and negotiate; they also have leeway when it comes to translating the rules into national laws – given that the international agreement provides this leeway. Kapstein (2006) states that the incorporation of Basel II into domestic banking systems was much less coherent than that of Basel I; Basel II was apparently more contested and the result was a compromise with many vague formulations or exceptions. This higher degree of discretion for individual domestic policies is in line with the arguments for why complexity in international banking regulation is harmful. The difference in this case is that not banks use loopholes in international agreements directly, but states use them to regulate banks differently. Especially in EU negotiations on implementing Basel III and on resolution regimes for banks, some member states aimed for discretion in national regulatory regimes while others and the European Commission wanted maximum harmonization (see chapter IV).

Furthermore, Kapstein already hints at a reason for why Basel II is different to Basel I which supports my argument against the application of Singer's US-centric model to Basel II & III: The US could not dictate Basel II anymore like they dictated Basel I – even if we do not consider that the EU had emerged as an equally powerful player. First, the US did not want to serve as the only international lender of last resort in case of banking crises anymore. As a legacy of the Bretton Woods system, the US still played the role of a benevolent hegemon in the world economy in the 1980s; they were expected to save the international system in case of great crises. Consequently, in Basel I they could more or less incentivize other countries to participate in the banking regulation club in exchange for protection in times of crises. In Basel II, the US did not have this leverage anymore (or did not want to use it) and, hence, had to make other concessions to make regulatory cooperation worthwhile for other countries. Second, US banks now partially depended

on foreign markets which gave other actors more negotiation power as well. Hence, Basel II was much more of a compromise than Basel I.

That this is a fair conclusion can also be supported by Genschel & Plumber's (1997) examination of when to expect upward pressure on regulation as a result of international cooperation within a powerful coalition of important countries. Based on the negotiation processes of Basel I and other observations, they conclude that pressure on other states to implement certain rules depends on the initial coalition that proposes these changes. A powerful "minilateral" coalition – as Genschel & Plumber call it – such as the US and the UK in the Basel I case leads to upward pressure for others to comply to the rules if this coalition passes a certain threshold of power (which was the case here according to Singer (2007)). It is likely that since the late 1990s/early 2000s this threshold cannot be reached if either the EU or the US refuse to be part of the coalition – only if both agree on a plan, they can pressure periphery states into complying. Otherwise, free-riding and international competition probably trump cooperation. The emergence of the EU as another pole will be covered later.

Therefore, Singer's model provides valuable insights into how banking regulation cooperation is conducted and the respective consequences for the regulatory framework, but it loses explanatory power for a multipolar world and the later Basel Accords. His book provides an analysis of how states form preferences about regulation without relying on regulatory capture theory while still allowing for private-sector involvement. His model treats states as dominant players in international banking regulation, their preferences are based on potential benefits from regulatory harmonization in terms of domestic financial stability and international competitiveness of their banking sector. Implementation costs do not play a role, because a critical mass of countries agrees on a certain regulatory regime that is pushed through by means of power politics – the costs are borne by less powerful countries. Considering the international environment faced by regulators and their diverging interests based on economic factors is a major contribution to understanding the process of negotiating regulation from a more state-centric point of view. Yet, it does not provide a convincing explanation for the negotiation process between states if there is no coalition that can simply use power politics to impose its preferred regulatory framework on others. This was the case after the end of the Cold War when Basel II was negotiated. Fortunately, there is another approach that explicitly works with the US and the EU as equally important international players and explains different outcomes based on their interests and those of their smaller partners.

II.3.4.2 Drezner: cooperation as the result of a game among powerful actors

In his book on international regulation, Drezner (2007) firmly rejects the general idea of private actors forming international politics: “Globalization does not alter what have been the facts of life in international relations for the past three centuries – great power governments, and not multinational corporations, make the rules for the global economy” (p. xiii). According to him, private actors play a role – mostly by states relying on them for functional purposes. They are part of the power play between states; they do not control it. This supports my argument from before that private actors on a multinational level have very little own leverage for influencing decision-making. In contrast to that, they might be very powerful on the domestic stage, for example as parts of coalitions with politicians.

Drezner argues that whether and to what degree regulatory coordination takes place depends on the benefits from international harmonization for states as entities (including economic actors such as banks) and, less straightforward, adjustment costs states face due to regulation (for example, they might have to implement rules that harm their economy). He develops a simple game theory model that is based on these two factors and later also takes power (market size and vulnerability in case of non-cooperation) of the players into account. In an extreme case, a powerful economic actor can force minor states into compliance with its standards. This means transferring all adjustment costs to others and benefitting most from the rules. Basel I might be regarded as close to such an extreme case where the US and the UK imposed international banking regulation on Japan and other less powerful countries (see Singer (2007)). Other cases with more equal players can lead to outcomes that reach from mutually beneficial non-cooperation if adjustment costs are high and benefits from cooperation are low to a complete and voluntary adaptation of foreign rules by a player if the opposite is true. It depends on its costs and benefits whether or not cooperation takes place.

Furthermore, Drezner shows that international cooperation can occur in different forms based on conflict among powerful actors and between this group and others. For example, if great powers’ interests (which are determined through domestic preference formation) are more or less aligned while less powerful actors disagree, the great powers will impose club standards for their group of great powers. If minor players want to join the club, they have to agree to the less favorable standards. If all players have diverging interests, all they will agree on are sham standards that do not change anything. According to Drezner’s case study on Basel II, the banking regulation regime represents a club standard. This is in line with his theory as long as we can

observe preference alignment between the powerful club powers that leads to this outcome. To examine the validity of this claim, we have to identify the club powers and whether they had similar preferences.

There are at least two blocks with similar economic power – and, thus, two potential club powers – in the world now: the US and the EU. The UK – a club power in the Basel I negotiations – was part of the EU during the negotiations (but also had its own preferences). Neither of the two powers can simply push through their goals alone as the US did with the help of the UK in the Basel I negotiations. Thus, the international stage of the game has fundamentally changed for Basel II & III in comparison to the Basel I world described by Singer.

This view of a new order of the economic world is supported by a study from Posner (2009) who finds that more centralization and the consolidation of the EU in the early 2000s led to a bipolar distribution of power in financial regulation – away from a unipolar world skewed to the Anglo-American countries, especially the US. This centralization and consolidation itself was the result of an inner-European process that was started in the course of forming the Single Market and the Economic and Monetary Union (Quaglia, 2007). Hence, it seems reasonable to conclude that Drezner's theory of games played between similarly powerful players is a better fit for the current environment than Singer's theory of unipolar power politics. However, if we refuse to believe that the EU and the US as the two dominant players have similar preferences regarding financial regulation, the explanatory power of his model shrinks dramatically.

In Drezner's world, non-aligned preferences of the "club-powers" would mean that they would either agree on sham standards or create competing standards with the support of smaller powers. This was not the case: There are no competing standards; the US and the EU (and others) meet in Basel to negotiate common and universal standards. The Basel agreements cannot be regarded as sham standards either, they impose binding restrictions on both US and EU banks as explained before. However, the adjustment costs certainly differ, also within the EU. The only conclusion from this in Drezner's framework can be that both dominant powers explicitly wanted the given standard with all its complexity and incoherence. They willingly imposed complex, inefficient regulation as a club standard, because it maximized their *mutual* cost-benefit calculations.¹⁶ The complex regulation would be the *direct* result of common interest of states.

¹⁶ This is important later, as the model from chapter III argues that complexity maximizes *individual* cost-benefit functions of states.

Otherwise, Drezner's theory cannot fully explain the outcomes of the Basel negotiations in their complex form and with diverging possible outcomes across club members. It seems like the latter is the case, because there are good reasons to believe that the Basel negotiations had to reconcile diverging interests instead of simply codifying common interests of the dominant powers as his model predicts.

II.3.4.3 Diverging state preferences

As mentioned by Kapstein (1989) and others, there exist objective reasons why states' preferences regarding regulation can differ with or without direct influence from the banking industry. Even completely independent, welfare-maximizing national regulators would heavily disagree on the design of appropriate international regulatory regimes depending on their domestic market structures. It is obvious that some economies can take more risks in their banking sector whilst others depend so much on a stable banking market that they should avoid all unnecessary risks even at the cost of reducing economic growth. There is no such thing as optimal binding regulation without a local context. Some of the ways how different optimal levels of regulation emerge can be based on the following arguments:

Copelovitch & Singer (2017) show that some countries tend to rely more on securities markets and that this is rather invariant over time. They also show that more developed securities markets in combination with capital inflows are correlated with more risk-taking in the banking sector which would explain persistent preferences for more prudent banking regulation in countries that rely more on market financing such as the US. Former examinations of the topic rather referred to capital flows as a singular, but more volatile explanatory factor for higher risk taking in the banking sector (e.g. Reinhart & Reinhart, 2008). Copelovitch & Singer, in contrast, show that there exist time-invariant reasons for some countries to prefer more prudent regulation. Some countries have incentives to strive for stricter rules while others would probably prefer looser regulation to support their economy as they are structurally more resilient in case of crises.

Additionally, the degree and type of foreign bank penetration seems to matter for regulatory decisions as well. Beck et al. (2013) argue that the share of foreign equity, deposits and assets of a bank and their relative size induce stricter or more lenient behavior of regulators in case of crises. A high share of foreign equity relative to foreign deposits might lead to inefficiently strict behavior of regulators (this means an inefficient resolution of a bank), because costs for resolution are borne by foreign owners while depositors or the respective domestic deposit

insurance scheme can rely on their more senior position in terms of receiving their money back from resolving the bank. Equity owners would, due to their junior position, prefer the bank to keep running as long as possible. Regulators who care more for shareholders than for depositors probably wait longer to dissolve a bank even if this leads to losses for other stakeholders. A reason for such preferences would be that deposits and assets are mainly held by foreigners whose financial well-being is not a concern of domestic regulators. These results show another avenue for general differences in regulators' preferences.

Furthermore, Young & Park (2013) show that the magnitude of regulatory responses to the Financial Crisis was positively correlated with how much states already intervened during the Crisis on a non-regulatory level (bail-outs etc.) and, more important, the presence of financialization in these economies. Countries with greater financial sectors showed significantly stronger regulatory reactions to the crisis. At the same time, the actual economic damage of the Financial Crisis in the respective country had no significant effect on regulatory change. Young & Park argue that this hints at some kind of regulatory opportunism. The Financial Crisis gave states with greater financial sectors the opportunity to overcome potential objections by the powerful domestic banking lobby that would prevent real regulatory change in normal times. Regulators might have seen the chance to pull domestic banking regulation closer to their optimal level of regulation. Among these economies were the US, the UK and Switzerland – the former two had already been the driving force behind the initial Basel I compromise. They also lobbied for stricter banking regulation on the international stage and, in case of the UK, on the EU level, but were not too successful in achieving such international consent. These countries lobbied for higher capital requirements than imposed by the Basel rules, but could not push them through and did not impose these regulations unilaterally. Competitiveness considerations, possible regulatory arbitrage, or other soft factors seem to hold them back from implementing their stricter optimal rules. For sure, the Basel rules only represent minimum requirements that can be translated into stricter rules by the respective state, but some pressure seems to hold regulators back from using all this leeway. Based on former arguments, competitiveness considerations and the provision of credit for the domestic economy seem to be such factors. These “upper bounds” for regulation will occur again in the model, but here they only serve as an illustration that the club powers seem to have different preferences regarding regulation.

Oatley et al. (2013) offer a network model of international finance which might also explain diverging preferences in international banking regulation to some extent. They distinguish two ways of how national banking systems can be connected in a globalized world. The flat system is

what we usually use as an implicit assumption of how banking systems are interconnected: all economies are more or less interdependent, a bank from one country has stakeholders all over the world. Hence, a failure of the financial system of one country affects all other countries and might lead to more failures all over the world. Such a system would require global regulation that would be more or less the same for all economies. Another possible order of international finance would be a hierarchical system: national economies are connected via a nucleus, a dominant economy that functions as a hub for international banking. In this case, the financial world would depend on this hub; crises in the smaller countries would not have devastating world-wide consequences, because they would be filtered through the powerful hub that is strong enough to deal with losses in one country or region. If, however, the hub gets into trouble, the world-wide financial system breaks down. Different, more stringent regulation is needed for the hub than for periphery states to ensure global financial stability.

The latter seems to be a better approximation of global reality than the former according to them. The US serves as a major hub for international finance and only regional financial systems are organized in flat hierarchies. This fits into what we observed in recent years: the Financial Crisis in the US spread all over the world and caused a general economic downturn while crises like the Asian Financial Crisis or the Euro Crisis did not have great effects on other regions. If this argument holds, global rules like the Basel Accords might be inappropriate for effectively regulating global finance by definition and planned discretion that puts stricter rules on economies that are 'too big to fail' might be a better, yet probably unfeasible solution. Yet, this observation is just a sidenote; the general argument shows that once again states' preferences for regulation for themselves and for their partners can and probably differ fundamentally.

Coming back to the initial motivation for this excursus, assuming preference alignment among dominating economies in the world is unrealistic. Empirical evidence suggests that states have reasons to pursue different degrees of international regulation even if we do not consider the domestic political landscape and potential regulatory capture. These reasons include their position in the global financial system as well as the importance of financial markets in the respective economy and their structure. The two great powers of financial regulation, the EU and the US, differ a lot in these defining characteristics making them unlikely to pursue similar preferences in regulation negotiations. Following this argument, a club standard in the group of powerful countries can only be the result of negotiations between them – just as a common EU position is a result of combining member states' preferences. Therefore, it seems like Drezner's

theory also cannot draw a full picture of the process from states forming preferences on regulation on the domestic stage to the final agreement.

This brings us back to the initial question of how the Basel Accords and other financial regulation are negotiated and how complexity occurs. So far, we have an idea about how states form their preferences and that these preferences probably differ fundamentally across powerful states. Drezner also gave us an idea about when states might be more willing to agree on common regulation without coercion based on costs and benefits of regulatory harmonization. In other words, we know why regulators come to Basel, why they disagree, and why they try to overcome these disagreements. We do not know how this is related to the empirics of incomplete and complex negotiation outcomes. This relates to the question of *how* they overcome disagreements. This is then the subject of chapter III.

II.3.5 The theory of (domestic) deliberate discretion

But before going into such a theory how complexity emerges in this international regulatory sphere, another excursus is required as complexity as a solution mechanism has been covered before with regard to national laws that sometimes leave discretion to bureaucrats (just like complex international regulation can leave discretion to banks and national regulators) and sometimes do not. This theory could potentially be an explanation that can simply be applied to the issues examined here. We will see that it cannot. However, a brief discussion why this theory of deliberate discretion/bureaucratic autonomy does not fit to the issue of regulatory corridors will also contribute to showing the applicability of the theory developed in this book and its limitations.

Huber & Shipan (2002) investigate 'deliberate discretion' as a rather similar phenomenon to the regulatory corridors this book is interested in: the roots of executive autonomy through discretion left by legislators. They show how institutional factors in a country can influence whether legislators put much effort into restraining the bureaucracy when implementing its laws and when they leave leeway – a corridor for bureaucrats to operate in. Among these factors are "policy conflict, [...], the bargaining environment, and nonstatutory factors" (p. 215) and they can lead to a legislative decision that would be complex in the sense of regulatory corridors: unspecific guidelines that leave implementation to the executive.

This seems like a theory very close to the one examined in this book. However, the different arenas make a comparison difficult and the explanatory factors differ substantially. Crucially, Huber & Shipan already have a very different definition of complexity compared to the regulatory corridors definition. In their case, more complexity – meaning longer, more detailed rules – refer to less discretion for bureaucrats, not more. This is partially because they operate in a two-level environment (legislators – bureaucrats) in contrast to the three-level environment of this book (international negotiations – domestic implementation and compliance – banks).

Such a difference in the respective arenas also affects the explanatory variables, especially preferences. They play a very different role depending on whether conflict emerges across these levels (as in Huber & Shipan's research) or among rule-makers on one level. This leads to a contradiction between the two models: Huber & Shipan show that discretion would increase if policy goals of both sides (legislators/bureaucrats) are aligned while my theory predicts more complexity (thus, discretion) if states' preferences diverge starkly. A legislator that struggles with their bureaucrats will try to bind them with detailed, unmistakable rules – exercising hierarchical power. The opposite is true in the international realm if no country/coalition is powerful enough to implement its own rules. There is no hierarchy and unspecific rules become a solution mechanism to achieve at least something as this book argues.

Thus, Huber & Shipan's investigation, while closely related to the subject of interest of this book – discretion as a feature – in some sense, is far away from the environment this dependent variable emerges in. This is not necessarily always the case for international banking regulation. For example if there was a winning coalition that could force others to comply – like the US/UK-coalition in Basel I – the theory of deliberate discretion might apply. The winning coalition would somehow play the role of a legislator that issues directives for the executives of different countries. Hence, it is of great importance for the validity of the model proposed in this book that there is no such hierarchical relationship as within countries.

Yet, if the outlined differences across arenas prove correct (which will be shown in chapter IV), the theory of bureaucratic discretion cannot be applied to explain complexity in international banking regulation. This increases the need for a theory of such international negotiations.

II.4 Summary and outlook of the theory of regulatory corridors

II.4.1 *The importance of complexity in regulatory outcomes*

The more state-centric approaches of international regulatory theory provide an assessment of the negotiation process that is much clearer and complete with regard to mechanisms than a simple reliance on regulatory capture theory. It is perfectly possible to incorporate business interests into regulators'/states' preferences and treat these preferences as a result of a process that includes lobbying from different actors, the general architecture of the respective financial system, the dependence of regulators on political approval, shocks and all kinds of other influences that can form preferences. The figure of a regulator simply serves as a representation of the state that acts based on these preferences and represents them on the international level. This view enables further investigation of what such regulatory bodies would achieve when negotiating with each other – in contrast to regulatory capture theory that searches the roots for results on the international level in such preference formation.

It is also a fair assumption that these preferences differ fundamentally across states, making compromises necessary if there is no single coalition with aligned goals that can push through their preferred set of regulation. This has been shown in this section and will be further investigated in the empirical examinations of international and European banking regulation harmonization in chapter IV. The important part of this work now is to make sense of diverging preferences across states and how they relate to regulatory outcomes of harmonization attempts. This is the added value of this investigation as it provides an extended analytical framework that comes closer to reality than former investigations.

Former analyses of the negotiation process mostly neglect the fact that the Basel Accords (II & III) and much of European banking regulation harmonization cannot be regarded as coherent outcomes, but that they are *complex* compromises that essentially reflect a set of eventual regulatory outcomes. The newer Basel Accords are full of exceptions and unclear definitions that leave much room for discretion. The same applies to a lesser extent to European regulation. This makes a new approach necessary that accounts for such complexity and explains it.

One could argue that the state-centric literature so far represents a position exactly opposite to regulatory capture theories. Instead of oblivious regulators controlled by private actors,

regulators can write complete contracts that regulate the behavior of the signatory states until they agree on a new contract – all is calculated and has a purpose. Instead of uncertainty, there only is risk. This is not what many scholars write explicitly, but this seems like an implicit assumption for all contracts that are not sham standards, because they always assume that the negotiated regulation has an immediate and clear effect on rules for banks on the domestic level.

In contrast to this, Edward Kane (2007) provides an explicit theory for incompleteness and complexity of the Basel Accords by treating them as incomplete multi-level contracts and focusing on the post-Basel II process of incorporating the rules and how Basel allows for discretion in this process. He explicitly writes “No matter how well-intentioned, any contract as complex as Basel II must be feared” (p. 9). Reasons for this frightening complexity, he writes, can be subsumed under the necessity for regulators to put some flexibility into the framework. In his words, regulators need loose ends as “options that can be characterized as opportunities for regulators to renegotiate or reinterpret the agreement when unforeseen or unspecified contingencies arise” (p. 9).¹⁷ The Basel agreement with its complexity, its legally unbinding character and without any direct enforcement mechanisms is for Kane only a frame for “a renegotiation game that binds officials only to monitor and to think about the global consequences of actions taken by the institutions they regulate” (p. 5). Kane treats the Basel Accords as if they were almost sham standards for states and the regulation would become complex *ex post* at the implementation stage. Consequently, he puts the emphasis of his argument on the renegotiation process during the implementation of the Basel agreement. Thus, he acknowledges complexity and associated problems but rather locates their roots in the domestic systems. He also only gives rudimentary explanations for the mechanisms leading to such a system.

Such an essential treatment of the accords as sham standards stands in contrast to arguments that the Basel agreements do have a direct effect on worldwide regulation and its outcomes. They constitute a flexible baseline for domestic regulation and seem to bind states more than one might expect after reading Kane. Furthermore, similar complexity exists in EU laws, which are binding and not subject to constant renegotiation. This means that there is reason to investigate them further and to look beyond the renegotiation game argument.

If they were only representing sham standards, why would the Basel rules be so contested? Why should states put so much effort into convincing their counterparts to reduce or enhance

¹⁷ This will be important later when we develop the real definition of regulatory corridors.

international requirements if they are not binding in the end? The empirical examination in chapter IV will show that it is clear to regulators that they can deviate from the accord to some extent in their domestic realm. The contest in Basel is about how much they can deviate (or how much banks can deviate under the rules). Regulators in Basel or Brussels try to gain as much leeway towards their preferred level of regulation and take away as much leeway as possible from others with conflicting interests. That this cannot be resolved through a unitary rule is the basic argument of the model that is developed in the next chapter.

II.4.2 Towards a theory of regulatory corridors

If we assume that regulation on the international level is mostly influenced by states and that they have diverging preferences, the negotiation stage seems to be the point that needs to be investigated further to understand complexity. Why do states include so many exceptions that the rules become extremely complex and their outcomes unpredictable due to regulatory arbitrage and unforeseen interactions of different exceptions? Why do states agree on something in Basel just to make use of all possible loopholes when implementing it? In short, what is the purpose, the benefit of negotiating complex accords?

When looking at the possibilities of how complexity can emerge in international banking regulation, it seems logical to isolate two occasions: *ex ante*, in the negotiations leading to the accord, and *ex post*, when international rules are incorporated into domestic regulatory frameworks (which were already classified as filters of globalization by Busch (2002)). *Ex ante* complexity immediately affects the accord, *ex post* complexity makes the regulatory framework more complex through different implementations of agreed accords into domestic rules – something that Kane would predict.

An excellent example for both *ex ante* and *ex post* adjustment of rules is the EU's Capital Requirements Directive IV and Capital Requirements Regulation, the incorporation of the Basel III Accord into binding EU rules, as described by Howarth & Quaglia (2013) and in case II of the empirical part. In this case, the EU is the rule-setting body and member states are the ones that try to influence such rulemaking (and whose right that is). The Basel III Accord was watered down in the process due to conflicting preferences by states. In order to address national concerns about capital requirements, the definition of very safe tier 1 capital was extended and now includes state loans to banks, which helped German public banks. Tier 1 capital regulations were also watered down to adjust to the business model of French banks to use insurance

company subsidiaries to increase their capital via double counting. In terms of implementing Basel III, this was ex post deviation from a previously agreed accord; in terms of European regulation that constitutes ex ante complexity.

Generally, the structure of the financial sector had a strong impact on the EU's implementation of Basel III and the negotiations on the international stage were by far not the end of the regulatory process. Similarly, the US incorporated Basel III with their own exceptions. For example, Basel rules only applied to banks with assets worth more than \$50bn. The ex post incorporation of the rules made the general regulatory framework even more complex and created new loopholes which was widely criticized (see before). The rules from Basel were renegotiated and adjusted to domestic needs but only to a limited extent and not completely (Daniels, 2017).

Following Drezner's theory on benefits and costs from regulation, this renegotiation on a domestic level *ceteris paribus* reduces the adjustment costs without reducing the benefits from cooperation. Of course, such renegotiations harm the coherence of the international agreement and contradict its initial purpose. Following Singer's model and Kapstein's arguments, it reduces stability and gives some banks a competitive advantage even in presence of an agreement that is supposed to provide a level-playing field. Other players will follow and also adjust regulation to their domestic needs.

The following theory of regulatory corridors will combine these arguments in a state-centric model with diverging preferences of players and such regulatory corridors as a solution mechanism. It will not explicitly differentiate between ex ante and ex post complexity but it will be applicable to both.

In a first step, regulatory corridors will finally be thoroughly defined. In a second step, the regulatory corridors-theory will be set up, which shows how it might be rational for states and central planners to incorporate complexity in their regulatory accords in the static case and also later in an inter-temporal case. This theory is then evaluated empirically in chapter IV.

III The theory of regulatory corridors

III.1 Definition of complexity: regulatory corridors

The expression 'complexity' gives an abstract idea of what is meant by it but does not refer to an obvious and universal definition. As a term for theoretical economic examinations, it is far too general and includes too many meanings. Just when looking at banking regulation, the term complexity can mean very different things. Complexity could mean that regulation is detailed and almost complete, which might be the case when every bank gets its own rules from skilled and well-informed regulators whose only objective is to serve the public good. Most likely, such complexity would not be too problematic. Yet it is almost unachievable for entities that can freely react to rules and where the effects of regulation can only be monitored with a time lag – this is a defining feature of banks in contrast to other subjects of regulation.¹⁸ Complexity could also be used in the sense of this book: extensive rules that include many exceptions and, thus, loopholes.

This section works its way from a general assessment of what complexity is in international banking regulation towards a (theoretically) measurable definition of complexity that can be used in the following model. Complexity takes numerous different shapes and for the purpose of this book it must be defined a way that grasps the 'costly' complexity of international banking regulation as described by its critics but that also allows for mathematical examination and can be measured – at least theoretically.

This book's take on complexity, thus, starts from the actual outcome of complexity that banks can make use of: exceptions that might culminate to unforeseeable loopholes, rules that allow for various interpretations, or diverging implementations. These are the features of complex arrangements that eventually lead to the phenomena like regulatory arbitrage or banks playing regulators as described by critics of the current regime. The costs of that can occur immediately or, more important here, can be the reason for unintended instability of the regulatory system. This is opposed to intended instability (e.g., through simply setting low standards) that are directly factored into decision making.

¹⁸ For example, one can directly measure the effect of carbon emission regulation in terms of carbon levels. Financial instability cannot be measured with certainty and only with a time-lag.

The abstract measure of this complexity is based on the distance between potential outcomes under one regulatory regime – the width of a regulatory corridor. This definition is inspired by new institutionalist ideas about complete contracts being impossible to design through highly complex arrangements but that simple incentive-compatible contracts might be better even if their implementation incurs direct costs.

The following section goes deeper into this definition and the arguments leading to it.

III.1.1 Complexity in international banking regulation

There are four different sub-types of complexity most relevant to the world this book operates in.¹⁹ They differ in terms of whether they are increasing discretion or not and whether the complexity occurs in international or domestic regulation. The focus of this investigation is on the international stage and especially the type of complexity that increases discretion.

This requires distinguishing complexity of this kind from ‘good’ complexity that makes things even clearer or closes loopholes. Not every additional rule will lead to more arbitrage even though this would increase classic measures of complexity. Thus, I will discuss an abstract measure of complexity in a narrow sense in the next sub-section.

Essentially, I will be comparing possible outcomes of regulation under the same regime. Greater distance between possible regimes could be a good indicator for complexity that also creates uncertainty that cannot be calculated in advance. This might come relatively close to actual assessments made by regulators and lobbyists when negotiating.

Complexity that increases discretion means that a hypothetical standard bank would face a greater set of opportunities to address regulatory requirements, which results in a greater set of potential outcomes of how to conduct business. Two similar standard banks could face different regulation based either on their own behavior or that of their respective home regulator (or even within one constituency if the regulator can treat them differently). This means that complexity is defined here as based on outcomes.

¹⁹ There certainly are more types of complexity that are not considered here.

This type of complexity of rules has multiple potential adverse effects, which are not mutually exclusive and might even reinforce each other. The effect this book is looking for in particular is that complex rules tend to increase room for arbitrage (see e.g. Haldane & Madouros, 2012; McLaughlin & Reese, 2016; Stieber, 2016) and, thus, increase the likelihood of financial instability by accident. This means that the resulting instability is part of the standard assumption that regulation intentionally only reduces the likelihood of failure to $x\%$ with $x > 0$. The complexity criticized by scholars and practitioners is equivalent to uncertainty, which is, in turn, costly through instability. Hence, the costly effect of complexity this book is evaluating is not direct risk (which could be directly calculated) but rather the unpredictable uncertainty of complex regulation through arbitrage. This is associated with higher discretion for regulated entities (or intermediaries such as national regulators).

Other potentially costly effects of such complex regulation include a bias towards big banks that can conduct more arbitrage, higher supervision costs, and plenty of other costs that are associated with more discretion for banks.

When looking at capital requirements, this could mean that a bank can manage to change capital buffers by exploiting the new set of rules to a greater extent relative to the old or a hypothetical alternative rule. A direct example for that would be the internal ratings-based approach for calculating capital requirements in Basel that adds complexity by enabling banks and regulators to exercise discretion in setting capital requirements compared to the standardized approach (where both banks and regulators face relatively fierce constraints).

In contrast, an example for a measure that reduces room for maneuvering is the introduction of an output floor for the internal risk models that sets a lower boundary for capital requirements. This rule arguably adds to the complexity of the general framework in some way: it is an additional rule, it increases the number of pages needed for regulation, and probably requires some explanation. However, it limits the option for banks to exploit the internal models regulation. This means that complexity in this case reduces discretion. This outcomes-based approach means that this is counted as a decrease in complexity, which might be counter-intuitive at first sight.

Thus, the metaphor of a regulatory corridor. If one thinks of regulation as setting up boundaries within which banks or national regulators/supervisors can operate, this reminds of a corridor

that can be wider or narrower. If this corridor is narrower, this corresponds to less discretion and, thus, less complexity in the sense of the model. A wider corridor would correspond to the opposite. The properties of this measurement of complexity are outlined below.

The second factor is whether complexity – or the discretion in outcomes of regulation – occurs internationally or domestically. A domestic rule that increases discretion for a bank would be a lenient tax regime, for example. This has little direct international effect but could alter the behavior of banks. The same applies to limits to discretion. An example for that could be that some banks might only be entitled to operate within a certain part of the respective jurisdiction or so. This might reduce the variety of outcomes for them but will have little international effect.

International regulations, in contrast, will or can have effects across countries. They can either be already part of the regulation (ex ante complexity) or evolve through different applications of the same accord across jurisdictions (ex post complexity combined with regulatory arbitrage). Thus, the rules that affect international complexity have an impact on the general outcome of the international regulatory framework.

Boundaries between cases are not that clear, of course. Some domestic actions can have second- or third-order effects on outcomes in the international framework. A certain tax regime in a country might not only affect the respective country but also its partners as tax evasion might occur. The remainder of this book abstracts from such blurriness and only looks at clearly international rules or implementations of such international rules.

	International	Domestic
<i>Increasing discretion</i>	Inclusion of internal ratings-based modelling (IRB) in Basel II (and before).	Tax exemptions.
<i>Limiting discretion</i>	Introduction of output floors to limit discretion in IRB outcomes.	Consumer-protection laws.

Table 1: Examples for different kinds of complexity in different senses of the word. For example, output floors and consumer protection laws increase complexity of regulation in the sense that they add rules but they rather limit discretion.

	International	Domestic
<i>Increasing discretion</i>	Directly refers to complexity according to the definition of regulatory corridors.	Not covered by the model
<i>Limiting discretion</i>	A narrower regulatory corridor and less discretion.	Not covered*

*Table 2: Classes of complexity and how they are treated in this book with reference to regulatory corridors.
: except for the case that the respective country was an outlier and its policies to reduce discretion in outcomes domestically also have an impact on the international stage.

The general idea of complexity as regulatory corridors is only partially compatible with other definitions as it only covers a fraction of what could be subsumed under the term. When measuring complexity as number of pages of regulation, the rules limiting discretion will increase complexity but are likely to actually reduce financial instability, for example. The regulatory corridors-definition fits the purpose of this investigation but cannot be regarded as a universal definition as it is focused on the discretion aspect of complexity and, thus, mostly refers to regulatory arbitrage and financial instability – in line with the arguments of critics of international banking regulation. It can still cover other areas but it is most suited for investigations with subjects of regulation that can apply evasion strategies and make active use of discretion opportunities, which then might counteract the purpose of the rule. This applies to banks and their regulation but much less to, for example, environmental regulation.

This book is specifically looking at the case of built-in complexity and flexibility on the international stage – meaning that states willingly create opportunities for evasion through complex outcomes to get some harmonization but, by doing so, give banks or other regulators the opportunity to adjust regulatory burdens, resulting in uncertainty. Hence, the often-criticized complexity of rules (as described in the literature review) is not necessarily a bug of the system, it might be a feature. This is what is then evaluated in the regulatory corridors-model.

III.1.2 Measuring and defining complexity as regulatory corridors

As discussed before, complexity is neither always bad nor always good and there is no obvious measure for it, which makes it difficult to include in models. As economists we strive for positivism, it is not common to make obvious normative judgements about any policy or regulatory framework as 'good' or 'bad'. Hence, one needs some working definition that is not based on such normative ideas.

Various authors suggest different approaches to measuring complexity of banking regulation. The simplest approximation is the number of pages of banking regulation accords as Haldane (2013) uses it to illustrate how complexity has increased over the years. Its simplicity is the great merit of this approach. It gives a general idea about how much more complex rules have become. However, it does tell us little about the nature of complexity and potential effects. One could fill hundreds of pages with extremely specific rules for every existing bank that would not cause any uncertainty or room for arbitrage. Measuring complexity simply as the number of pages is unlikely to be a good approach for the purpose of explaining its emergence.

Barth et al. (2008, 2014) rather implicitly define complexity in rules by contrasting it to what they regard as not overly complex. The same is true for most authors that suggest 'better' regulation such as Hellwig & Admati (2013). By suggesting, for example, fixed leverage ratios as a bottom line of regulation, they argue that regulation without such a simple bottom line is more complex and leaves more discretion. The mechanism is that complexity allows banks to undercut regulation and a simple leverage ratio prevents that – a simple bottom line that constitutes a boundary for evading regulation (or a wall for the regulatory corridor). One could, therefore, measure complexity by how much the outcome under the complex regime differs from that of the bottom line. This would give us a value of complexity through relatively simple calculations.

To understand this, it is useful to look at an example. A bank that faces standard Basel I regulation with risk-weights for different asset classes could reduce regulatory capital requirements by, say, moving investments from corporate bonds to mortgages, which might enjoy a lower risk-weight. The capital required to be held for covering losses in the investment portfolio might decrease from 4% of investments to 2%. This could be a hypothetical maximum reduction in regulatory capital requirements under a fairly complex regime. If the floor imposed by a leverage ratio is now resulting in regulatory capital requirements of, say, 3%, the distance of one percentage point

would show the effect of having the complex regulation without the floor element compared to a case where a floor exists. The measure would be a comparison of outcomes under hypothetical regulatory regimes.

This focus on outcomes helps to get a measurement of complexity and to avoid the caveats of defining 'good' or 'bad' complexity. Outcomes of regulation are an auxiliary construct similar to counting pages of accords, but this gives us a closer look at what regulators are likely to care about when putting rules in place. It is unlikely that they pay particular attention to the length of the accord. They (and banking lobbyists alike) will calculate outcomes under different scenarios, which show how much regulations will affect certain types of banks. We cannot do the same, but all that is needed for the analysis here is an abstract understanding of how it might be possible to measure complexity.

Yet, this approach has obvious downsides. First, it requires a bottom line, which could be a leverage ratio or simply zero regulation. Comparing outcomes to a fictional leverage ratio seems quite arbitrary. Comparing to zero regulation would not give us an appropriate picture as banks will always hold capital reserves by themselves to not go bankrupt the moment one investment fails. Second, it is obvious that comparing the 'complex' regulation with a 'simpler' one means comparing two different regulatory approaches. The 'complex' regulation could also simply be weak – not because it leaves so much room for arbitrage but because of its general design. What this book is looking for is the unforeseeable reduction of regulatory burdens through complexity and not simply weak regulation (as for example Basel I, which probably was rather weak than complex and did not fully work out because of this weakness). However, this approach brings us closer to a working definition of complexity by introducing a focus on the anticipated outcomes of regulation instead of evaluating regulation itself.

The focus of these considerations is using an outcome approach for making one and the same piece of regulation 'comparable'. This means that in case of complex regulation the anticipated outcomes can differ. This is most obvious when looking at ex post complexity: the international accord, the regulatory universe evaluated here, allows for different implementations and, thus, different outcomes of regulation if we look at a hypothetical comparable bank portfolio across countries. But the same is true for a regulation that is ambiguous in itself; it can be interpreted in different ways and allows banks with similar portfolios to act differently. Of course, more than two outcomes are possible but only the two most extreme ones count as the others are part of the

set of regulations with the two most extreme ones as boundaries. Hence, outcomes of regulation of a bank with one hypothetical standard portfolio can be defined by one point for 'simple' rules – e.g., in case of a strict and universal leverage ratio – or by two points when the regulation is complex, i.e. allows for ambiguity.

This outcomes approach allows measuring and comparing regulation for a hypothetical bank with a certain portfolio. The complexity of a regulation is then defined by the distance between the two extreme outcomes. The greater the distance the greater the complexity. This is, of course, also only an approximation to measuring complex solutions. However, comparability and mathematical clarity require some abstraction.

This concept can be refined by looking at a set of possible banking portfolios, not only one. Imagine two countries negotiating common regulation and one of them has a banking market dominated by bank type A and one has bank type B as the dominant player. These types differ based on their portfolios. One regulatory regime could now be assessed based on its potential outcomes for banks of types A or B respectively if they make use of all exceptions possible (just hypothetically though as we will never be better in regulatory optimization than the banks themselves). This can be put into vectors and one can measure the distance between the two vectors that represent the regulation of the respective country. This concept can, of course, be extended ever more to resemble negotiations of states – the basic mechanics will remain the same. However, it will also remain an abstract approach as there is an infinite number of potential banking portfolios.

This idea of regulatory vectors that form the boundaries of regulation under a certain regime again corresponds to the picture of a regulatory corridor with the boundary vectors being the constraining walls.

Looking at the issue in terms of vectors also has the advantage that there is not necessarily one generally stricter regulation regime and one that is more lenient. This will come handy when interpreting results later on – this whole investigation is about divergence in regulation, not about which one is weaker and which one is stronger.

Eventually, complexity leads to costs that are not necessarily part of the most basic calculation why states might want to introduce different regulations. This comes back to the criticisms by

scholars of international banking regulation that complexity is a major contributor to financial instability. States and their representatives can, of course, anticipate that diverging regulation and complexity lead to arbitrage behavior. However, they cannot see through which channels it will occur – otherwise it would be part of the previous calculation on whether one should close these loopholes. Hence, the results from complex regulations are uncertain and states have to accept uncertainty if they want to enjoy the benefits of flexibility in regulation that comes with complexity. I assume that uncertainty increases with higher complexity, which in line with arguments delivered by various authors (e.g. Haldane & Madouros, 2012; McLaughlin & Reese, 2016; Stieber, 2016). States cannot calculate uncertainty, but they can build upon the simple insights that more exceptions, more ambiguous rules, and other factors that contribute to complexity increase uncertainty and potential costs from it. These can be factored into general decision making simply in terms of *expected* costs from complexity.

The definition of complexity as a regulatory corridor with upper and lower boundaries is used in the following model to characterize regulatory outcomes. This is based on the previous argument that costs of such corridors can probably be assessed on basis of expectations. This definition also comes with some limitations though.

III.1.3 Limitations

The definition and the way to measure complexity here is very particular and cannot be applied to all other cases of complexity. A crucial factor is that the subjects of regulation react to rules directly and thus alter the outcome of the rules even more than envisaged before. A bank might transform its portfolio to reduce regulatory burdens but by doing that, it creates instability through these transformation operations. For example, banks might create a bubble by moving capital into the housing market to avoid higher capital requirements on corporate bonds without ‘real’ reasons to shift investments. The move to housing finance might be anticipated but the associated risks due to the bubble will not be completely factored into risk assessments.²⁰

In contrast, regulations on passive entities are unlikely to cause such uncertainty. One can arrange extremely complicated international climate protection accords and still achieve the goal of that accord. Nature will not adjust to the regulation and the contributions of actors to the goal can be

²⁰ It might not be unrealistic to assume that some of such regulations actually want to encourage an artificial shift in investment patters.

clearly measured. The contributions to financial instability cannot be foreseen neither can they be clearly attributed to a particular actor *ex ante* – even *ex post* might be difficult.

III.2 The regulatory corridors-model²¹

The purpose of this model is to show that there is a rationale for policymakers to introduce regulatory complexity – in the sense of increasing discretion and, thus, uncertainty of regulatory outcomes – in international accords. This theory goes beyond explanations that rely on the capture of international negotiations by lobbyists in terms of evaluating mechanisms and rationales for the outcome of interest. I show that it is rational to introduce regulatory corridors in international accords if signatory countries have different preferred levels of regulation. This means that I offer a state-centric, Rationalist²² explanation for perceived inefficiencies in international regulatory agreements.

The only relevant actors in this model are countries as abstract entities, which negotiate an international accord. Comparable to two players in a standard game theory model, I take their preferences as given. They might be determined by a council of economic experts who decide on the best regulatory outcome for a country, they might be influenced by lobbyists, or they might just emerge in a random process. I assume that countries' preferences for regulation can differ, based on arguments presented in Chapter II. Lobbying and even domestic regulatory capture is possible but not in a symmetric fashion in the sense that states' individual preferences can be fully aligned or the international negotiations can be captured directly. Thus, banks only enter the model indirectly: as forces that might influence countries' preferences and as the subjects of regulation that will exploit any room for maneuvering that regulators are willing to give them.

In the examples used throughout this section, I will start from the assumption that country interests in international negotiations are somehow related to the respective institutional setting in this country. This is merely to abstract from any inner-state tensions and to create intuitive examples. This is of no particular importance for the argument, which only shows that differences in preferences of any kind could lead to complex regulatory outcomes that increase uncertainty and financial instability.

²¹ The mathematical arguments from this section are explained in more detail in the appendix.

²² Rationalist in terms of state-centric international affairs theories that build upon cost-benefit analyses.

Another crucial assumption of this model is that closed financial markets are not an option. This would only further complicate the investigation and is not a feasible alternative in current regulatory discussions (see chapter II on this). Hence, this model only applies to a world with open capital markets, which is a straightforward assumption as harmonization would probably not take place otherwise. As a corollary this model also answers the question why states would initially enter regulatory harmonization negotiations, which essentially restrict their flexibility: they want to restrict others. This will not be discussed much further as the question of this book refers to why such harmonization is not clear and unitary. But the question of why states harmonize regulation at all can make for an interesting application of the model.

It is important to stress that this investigation is about the process of negotiating regulation. The explicit regulatory outcomes that occur in the real world such as the Basel Accords inform my model but I do not explain how the specific outcome was reached. My model is focused on the abstract complex nature of the outcome instead. Complexity in this case is understood as defined in section III.1: regulatory regimes that allow for multiple outcomes for the same bank – regulatory corridors. The larger the difference between regulatory outcomes under one and the same regulatory framework, the more complex it is.

This means that my level of analysis is located above considerations on what drives states' preferences and how this influences decision-making. I focus on the negotiation process and the relative degree of regulation. Considerations on explicit preferences necessarily include absolute levels of regulation and some measure for that. This is not necessary when only comparing regulation in relative terms.

In the following, I will first set up a baseline model that explains the way of thinking about how country preferences and (international) regulation correlate on a basic, static level but without conflict between multiple actors. It breaks down countries' preferences to a simple cost-benefit analysis to make abstract predictions about such preferences. This stage represents a hypothetical scenario where one country can set the rules for everyone else. This might be similar to the Anglo-American alliance that pushed through Basel I regulations (Singer, 2007). Note that this already assumes that capital markets are open. I do not cover the case of closed capital markets even though this could be seen as a special case of my model. Second, I introduce multiple relevant players and how they might solve a negotiation problem in case of diverging preferences for regulation without having the option to opt for complex regulation. Third, I show that

diverging preferences across states would lead to ambivalent outcomes in international regulation if it were possible to agree on a set of regulatory regimes instead of just one specific regime – both in a setting with a social planner in charge and without. This includes introducing a factor γ that inflates expected costs depending on how complex agreements are. This provides the first major result of my theoretical considerations: costly complexity can be worthwhile for rationally acting states. Regulatory corridors solve such a negotiation problem. Fourth, I introduce an intertemporal version of the model, which probably provides the most sophisticated results of my theoretical considerations. This is because at this stage of the model, I will have incorporated the major factors that could drive and prevent complexity when looking at rationally acting states: cost-benefit analyses, multiple periods, a time-lag in when costs of regulation are realized (i.e., crises), and a discounting factor for future periods. My empirical analyses later will show support for the static model but not for the intertemporal one. This chapter concludes with a discussion of limitations of the model.

III.2.1 Baseline Model

Imagine the simplest way of calculating whether some endeavor is worthwhile for a risk neutral and rational actor: the difference between benefits and costs. As long as benefits are greater than costs, a rational, risk-neutral actor will engage in the endeavor. But they will also try to maximize the difference between benefits and costs in order to maximize profits. In a more applied way, this is what Beck et al. (2018) are looking at when they show empirically that international supervisory cooperation is likely to have positive effects on financial stability but might come at the downside of national supervisors having to adjust their approaches. Such a trade-off is modelled here.

Assume that countries are such rational, risk-neutral actors and that they face the challenge of regulating their banking system in an international environment in a way that maximizes their benefits from having this open banking system. Such benefits include more efficiently distributed capital and every benefit a country has from allowing banks to operate under a certain set of rules. Thus, this model assumes that the benefits and costs from banking for a state are determined by the regulatory regime.

This assumption is straightforward given the institutional relationship between states and banks in a capitalist society. Usually, the government steers the banking sector by setting certain rules

and instructing one or more agencies to enforce these rules – altogether this is the regulatory environment for banks. The state does so in order to get the maximum out of allowing banks to operate: on the one hand, it wants them to distribute credit to the parts of the economy where it is most needed and to support economic activity in the country; on the other hand, it wants to avoid the downsides of excesses in the banking sector such as sudden drops in economic activity as the result of bank collapses. Both the ability of banks to provide credit and their stability are determined by the regulatory environment. Regulation can also serve political purposes such as keeping critical infrastructure under control of the respective government, as Singer (2007) has shown. However, such purposes could be subsumed under benefits or costs from banking in the long run respectively.

A bank that is restrained by *binding* regulation will not be able to act the way it would without this regulation. Credit given out by this bank is either reduced or redirected into sectors of the economy that are inferior investment opportunities in terms of expected profits. Otherwise, the bank would pursue the original investments from the beginning and regulation would not be binding and not alter anything. Hence, binding regulation reduces benefits if we assume that banks know best where to invest most productively (and we abstract from any risks here).

On the other hand, the purpose of introducing regulation is to reduce costs from having a banking system. These costs certainly include the crises that banking systems encounter – often as a result of financial euphoria in a Minskyan²³ sense – and the resulting bailouts but also minor disruptions of the economic machinery as banks themselves might have incentives to behave in hazardous ways even without financial euphoria. The alternative to the situation of having a relatively free and market-based banking system would be a system of rather strict regulation or equity-based banking – a feasible solution if benefits of having the free banking system are lower than the costs (e.g., if the system remains extremely unstable) at any given level of regulation.

My concept of regulation itself also needs some more elaboration. Regulation can be everything from straightforward and explicit capital requirements to unofficial customs and minor supervisory decisions. The type of regulation this model is focusing on is direct regulation

²³ As described in the introduction, Minsky (1992) discovered a crisis regularity in capitalist financial systems. More stability of the financial systems leads to more confidence in the system, which in turn leads to riskier investment decisions because they seem less risky at the time. Hence, stability has a destabilizing effect. Regulation restraining such developments can help to keep the system running - similar to the ropes that kept Ulysses from crashing his ship into the rock at the Sirens' island.

implemented by international standards or domestic rule-makers that has an immediate effect on how a bank conducts business. What I regard as complexity in the sense of my model are regulations that can yield different outcomes for the same type of bank, a regulatory corridor. This can either happen by initial rules of the regulatory framework (ex ante complexity) or – as I focus on the international stage – by differences in implementation (ex post complexity), which could result in regulatory arbitrage. One and the same bank might face very different rules in two countries that adhere to the same regulatory accord. A detailed discussion of complexity can be found in section III.1.

Capital requirements for credit risk are a good example for this type of complexity and I will use them as such throughout this chapter.²⁴ Banking regulation usually requires banks to hold reserves for every investment they make in order to prevent insolvency of the bank in case the investment is not as profitable as planned. This means that a bank that gives out a plethora of loans can cope with losses in some of these investments without facing bankruptcy by simply paying for these losses by using the capital put aside for such cases. However, capital requirements can differ based on how they are calculated and based on how domestic supervisors act. If the banks face lower capital requirements by switching to other calculation methods, this increases their ability to give out credits (higher benefits) but also is likely to harm financial stability as risk buffers decrease (higher costs).

The profit from having a banking system for country i is $U_i = B_i(r) - C_i(r)$ with the vector $r = (r_1, r_2, \dots, r_n) \in [0,1]^n$ representing the regulatory regime consisting of n single values that represent the parameters of the regulatory regime. For simplicity, I will limit my analysis to a one-dimensional $r \in [0,1]$. This is just for simplicity and illustrative purposes. In this abstract representation, $r = 1$ could represent the hypothetical case that the path of a bank is completely prescribed by the rules, the hypothetical maximum regulation event. This could be equity-based banking or other very stable constructs that reduce the likelihood of crises to close to zero but also restrict credit. In contrast, $r = 0$ represents the case that no binding rules exist: laissez-faire regulation. One could imagine a one-dimensional r as the effective, aggregate regulatory capital requirements (including what one could see as indirect regulation) for one particular type of bank or as a percentage of the theoretical maximum of regulatory

²⁴ This is because capital requirements are featured prominently in many pieces on international banking regulation. Especially the switch to internal ratings-based capital requirements for credit risk was heavily criticized as outlined in chapter II. The empirical part will cover a very similar but less complicated topic: operational risk requirements.

requirements on banking businesses. In a more abstract way, it could also simply be an indicator for regulation, which maps regulatory parameters into numerical values. The benefits-cost argument is graphically depicted in Figure 3.

III.2.1.1 Benefits function

Let us first examine the different parts of this simple equation that is the centerpiece of my argument. If we would not care about costs at all, we would try to maximize a simple benefits function, representing the added value from banks in terms of capital allocation and other function they have for society. It seems reasonable to assume that societal benefits are highest at $r = 0$ because this does not restrict banks in any way and the market could sort out the rest in the most efficient way.²⁵ All risks and resulting costs related to this come later in the cost function. When the state does not intervene and some regulation would benefit all banks, they would come up with self-regulation.

This entails the rather strong assumption that banks know best where to invest and that regulation cannot improve decision-making in this regard. By maximizing profits, they maximize utility for society (but remember, how these benefits are determined is a black box process and can actually include lobbying). Consequently, more regulation reduces the benefits from banking because it reduces the room for maneuvering for banks and increases the influence of the state – the inferior decision maker in terms of profits. To make that clear, I treat banks as better decision makers in terms of where to invest money than the state. This means that all benefits for the state from having an open, capitalist banking system come from the added value compared to state-directed banking. The benefits function represents this surplus.

A weak regulation attempt will not have much impact on banks' behavior, while ever stricter regulation will lead to ever more reductions in benefits: the function $B_i(r)$ is strictly monotonically decreasing and concave in $r \in [0,1]$. This assumption is straightforward when one bears in mind the example of rising capital requirements for a certain bank. As soon as capital requirements are 100%, the lowest level of benefits from banking will be reached, but 99% is almost equally bad. In contrast, a rise of capital requirements from 0% to 1% would not change

²⁵ The assumption of (financial) markets being the most efficient way of distributing resources could be contested. However, I abstract from all potential costs of maldevelopments on markets and from market failures. Markets know best in this model but they might misbehave.

much in a bank's calculation of optimal investment decisions since it needs a small risk buffer in any case.²⁶

$$B_i'(r) < 0, B_i''(r) < 0$$

III.2.1.2 Cost function

Costs from having a banking system are represented by the function $C_i(r)$. This abstract function entails any additional costs that a capitalist banking system produces at a certain level of regulation – for example, due to banking crises and the resulting downturns in the economy – based on probabilities that these events occur. This means that there are two main determinants for the cost function: absolute costs of a banking crisis and expectations about the likelihood of such a crisis. Both are going in the same direction: stricter regulation can either reduce the absolute costs of a potential crisis (e.g., through mandatory deposit insurance) or reduce the likelihood of a crisis (e.g. through capital requirements). For a risk-neutral actor, it does not matter which one of these effects prevails. The important property for us is that stricter regulation (r up) leads to lower expected costs of crises.²⁷ Thus, the cost-function is decreasing in $r \in [0,1]$. It also seems reasonable to assume that the first attempts to regulate have greater effect on stability or crisis costs than the ones that might occur later: to use the general example, a rise in very low capital requirements will have a greater effect than increasing capital requirements that are already high, but there will be some effect in any case. Thus, the cost function is strictly convex and strictly monotonically decreasing. Lastly, a crisis can never be ruled out, there will still be a small chance of crisis even at $r = 1$ due to noise and human error. This means that

$$C_i(1) > 0, C_i'(r) < 0, C_i''(r) > 0.$$

Furthermore, I normalize all absolute benefits relative to absolute costs. This means that I set them in relation to absolute costs based on the highest possible amount of costs at $C_i(0) = 1$. Costs at $r = 0$ are by assumption greater than benefits such that no player will introduce zero

²⁶ Of course, a bank could engage in Ponzi-like behavior and operate without any risk buffers. Even minor regulation would have an effect on such firms.

²⁷ Stricter regulation also reduces the benefits from banking, but the two functions will be combined later. Hence, the cost function captures costs that occur *despite* regulation, the benefits function includes missed opportunities due to regulation (that is why it is maximal at lowest regulation as this leaves all paths for investment open).

regulation. At some point, costs will exceed benefits again and benefits will hit 0 at some point;²⁸ the model will not yield corner solutions as a result of this assumption.

III.2.1.3 Static optimization without negotiation

Imagine there is only one country that sets rules, one set of regulation, and a simple utility function that yields the well-known result that profits are maximized where marginal benefits equal marginal costs:

$$r_i^* = \operatorname{argmax}_{r_i^* \in [0,1]} [B_i(r) - C_i(r)] = \operatorname{argmax}_{r_i^* \in [0,1]} U_i(r) \quad (1)$$

Or: U_i is maximized at $r = r_i^*$ if $B'_i(r_i^*) = C'_i(r_i^*)$ as depicted in Figure 3. This can be written as

$$\frac{B'_i(r_i^*)}{C'_i(r_i^*)} = 1.$$

This fraction describes the optimal ratio between marginal costs and marginal benefits from banking that a country can achieve. The closer such a ratio comes to 1, the closer it is to the individual optimum.

Regulation will be set at r_i^* , no matter whether the country itself decides which path of regulation to follow or a social planner takes over the responsibility to choose its optimal level of regulation. This is a simple micro-economic optimization problem, which gets trickier as soon as another player becomes relevant for decision-making.

Both benefits and costs from having an open capitalist banking system are abstract concepts and do not directly represent actual amounts of money or anything similar. Benefits can translate into all different kinds of positive developments for those in charge of regulating banks: promotions, good election results, or simply a working economic system. Costs are equally abstract. For my analysis, a clearer definition of benefits and costs is not necessary, it is just important that both are realized on the same level. If we, for example, assume that effects are evaluated on the level

²⁸ $r = 1$ is the latest stage at which this can happen.

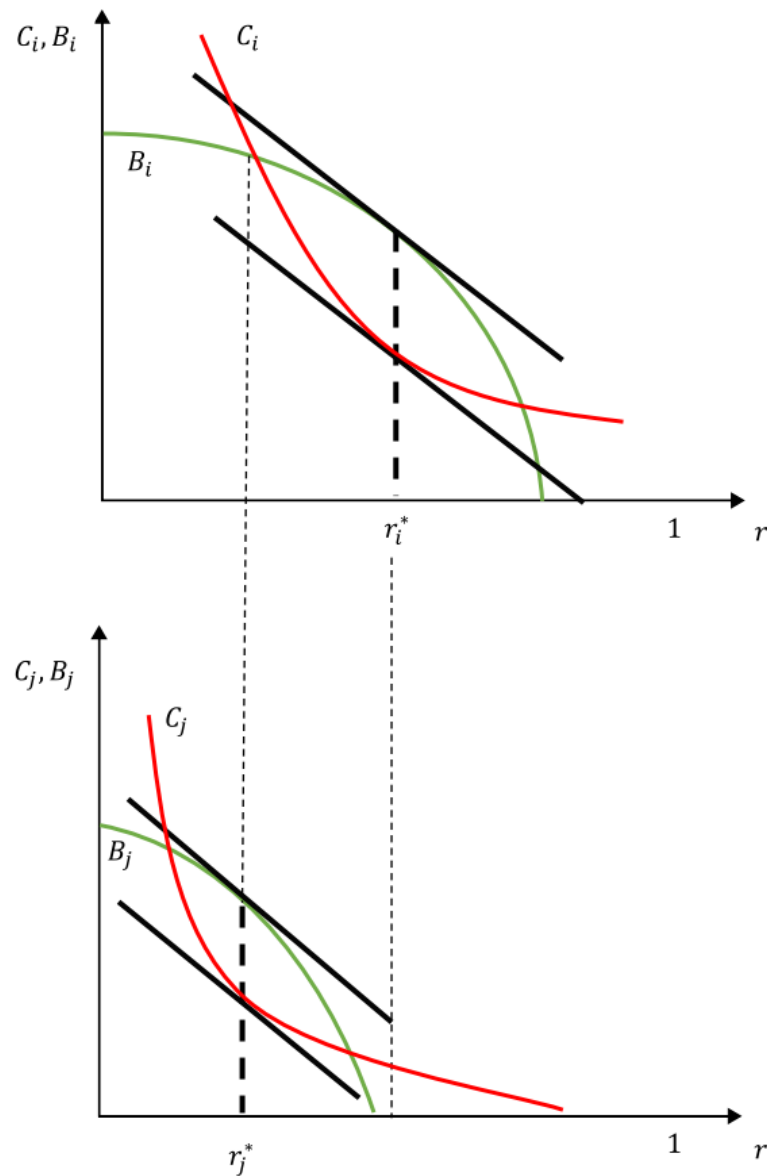


Figure 3: This graph shows an example of the respective individually optimal level of regulation for both i and j based on their individual cost and benefit functions. These functions depend on the level of regulation $r \in [0,1]$. Furthermore, the fine dotted lines indicate how the optimal regulation of i would affect the difference between benefits and costs for j and vice versa. The black lines indicate the slope of benefit and cost curves at the respective optimum. In this example, both players would face losses if the respective other player can impose regulation on them.

of politicians seeking re-election, such benefits would include how much the banking system supports economic developments and the agenda of the politician in general.²⁹ These benefits would then have to be weighed against the expected costs from the capitalist banking system in terms of reduction in economic activity in case of a financial crisis that, in turn, reduces re-election prospects. This is just an example since I do not make any prediction about who actually influences a country's position on regulation. It is even possible that different countries have very different mechanisms of how to determine their benefit and cost functions. The only important assumption, besides the shape of these functions, is that they might differ from country to country even if only very abstract and objective country interests would determine their shape.

III.2.2 Multiple powerful actors

As soon as we enter a situation with two or more players (countries), we have to consider the possibility that their individually rational actions do not coincide with the collective optimum – especially when the actions of one actor also have an effect on others. Such a collective optimum would represent the objectively best (non-complex) solution to the problem of balancing benefits and costs based on regulation for all players such that collective welfare is maximized. Remember that these benefits and costs are still based on states' preferences that emerge in a black box process. Hence, what I call 'objectively best' is not based on certain indicators but on the preferences that are represented at the international negotiation table. However, to make it easier to relate to my arguments and examples, I will assume that the preferences of countries at the negotiation table in my examples are based on their real institutional settings.

For the sake of simplicity, assume that there are two countries in the world, i and j , which only differ in terms of their benefit and cost functions that determine the best regulation for their respective banking system. Note that these functions fulfil the same properties as before, but r_i^* (the regulatory optimum for country i) does not necessarily coincide with r_j^* (the regulatory optimum for country j). This also means that the collective optimum does not necessarily coincide with what will come out of a game where some regulation is set by the countries individually. The assumption that different countries might have different preferred levels of regulation has been motivated before and seems quite reasonable.

²⁹ Assuming that this agenda itself does not lead the politician towards demanding regulation out of political considerations.

Just look at France and Germany that are rather similar by global standards and even share one overarching regulatory framework as EU members, but their individual preferences for regulation differ due to institutional differences in their banking sectors. Even though they are neighbors, have a similar size, and similar GDP per capita numbers, their economic systems differ substantially. Especially with regard to banking: Smaller banks play an important role in the German banking system and are closely connected to politics (Markgraf & Rosas, 2019) while the French banking sector is dominated by few big banks, which leads to very different preferences in regulation as motivated before. Stricter rules for larger banks might thus affect both the benefits (a credit crunch in the economy) and costs (lower probability for crisis of these big banks) in very different ways in both countries. France's economy would lose more benefits from banking as its banks would give out fewer loans, Germany might be less affected by that as especially small and medium enterprises (SMEs) could turn to smaller banks.

Assume for the moment that only one set of regulation can be sustained if a state takes part in international banking markets. Hence, there exists only one level of regulation in the world and, therefore, states must have joint regulation if they want to have open capital markets. This regulation either emerges as the result of negotiations and is coherent across countries or by accident because no agreement is reached internationally. The latter case would represent a special case of the later introduced complex regimes because different regimes could coexist and banks could choose between these regimes. This international framework would be what sparked regulatory harmonization at the first place: extremely prone to crises. And it would most likely lead to countries closing down their capital markets again. Thus, in order to construct a benchmark for regulation, I will focus on the case of one coherent international regulatory regime that is the result of successful negotiations between states.

Throughout this model, I assume that i prefers regulation that is represented by a higher value of r than j 's, expressed by $r_i^* > r_j^*$. This means that if one country could choose the regulatory regime unilaterally, it would go for this level of regulation. The values of r could represent different regulatory sets. For simplicity, I assume that a higher r is associated with stricter regulation and, thus, that i prefers stricter regulation than j . This is not necessarily the case as my model only requires that r is some function of regulation that corresponds to monotonous, continuous cost and benefit functions. It seems most reasonable to assume that stricter regulation decreases both costs of regulation (which include expected costs from crises) and benefits.

However, this is not necessarily the case (e.g., when limiting a bank's ability to diversify risks). Still, it might be most intuitive to think of a higher r as stricter regulation.

In this sense, the values r_i^* and r_j^* represent an upper and a lower bound to what level of regulation the two actors will agree on, both would lose from going higher or lower than this. Imagine a regulatory regime stricter than what i would prefer, $r_{World} > r_i^*$: this would mean that both players would improve their individual utility by reducing the regulatory burden. Hence, the regulatory regime must lie somewhere between the optima of both players. This is depicted in Figure 2.

The main determinants of $r_{World} \in [r_j^*, r_i^*]$, the international regulatory regime, would be the negotiation power of the actors and their preferences. And since I abstract from contagion in a narrow sense, each country would still prefer to come as close to its regulatory optimum as possible without any regard for potential negative effects on the opponent (as long as it is worthwhile for them to stay in the international regime under the respective regulation; assume that this is the case). The negotiation power of the respective country or bloc will determine regulation on the international level. This stage of the model resembles the Basel I-world investigated by Singer (2007). The US and the UK together assembled so much negotiation power that they could model the international regulatory regime based on their preferences and Japan and others complied.

A social or central planner, a powerful international regulator, would determine the regulatory regime differently.³⁰ Given that both countries yield the same importance for the planner, she would balance the upsides and downsides of the common regulation for both countries, when determining r_{World} . Her optimization problem will simply combine the optimization problems of both countries: $U_{World} = B_i(r) + B_j(r) - [C_i(r) + C_j(r)]$, which is maximized by the level of regulation r_{World}^* that solves $B_i'(r) + B_j'(r) = C_i'(r) + C_j'(r)$. Or

³⁰ The EU might come close to such a social planner on the European level. This will be part of my empirical research in cases II and III that is supposed to check the validity of this model.

$$\frac{B'_i(r_{World}^*) + B'_j(r_{World}^*)}{C'_i(r_{World}^*) + C'_j(r_{World}^*)} = 1 \quad (2)$$

Weights on benefits and costs for one country could be used to model differences in country importance.

Since I assume that $r_i^* > r_j^*$, this r_{World}^* will be too low for country i and too high for country j compared to what they would introduce unilaterally. For country i this means that

$$\frac{B'_i(r_{World}^*)}{C'_i(r_{World}^*)} < \frac{B'_i(r_i^*)}{C'_i(r_i^*)} = 1 \quad (2.1)$$

Contagion might lead to crisis in one country just because of a crisis in another one, even though its own banking system is healthy. This might influence the decision-making of the social planner as well as the individual country preferences. This effect is disregarded here.

In the following, I will present an argument why this simple optimization argument does not necessarily lead to the best possible outcome – neither on the individual nor on the collective level. I introduce the concept of complexity of international regulation which relaxes the assumption of r_{World} being one specific level of regulation. Instead, I argue that corridors in the international regulatory frameworks, which allow countries a certain degree of discretion in their regulatory choices, can be welfare-enhancing even if this corridor comes at the cost of increasing the expected costs of crises – as criticized by many scholars of international banking regulation. Essentially, I allow for r_{World} being a bounded set instead of a single point and show when this might be an optimal choice.

III.2.3 Introducing regulatory corridors

III.2.3.1 Individual actors

Assume from now on that the international regulatory regime does not necessarily produce exact outcomes on how to regulate banks on a national level. There can be differences across countries

and there can be a set $[r_{j,World}, r_{i,World}]$ with $r_{j,World}$ and $r_{i,World}$ representing the upper and lower bound of this convex set of regulatory regimes that are possible under the international regulatory regime. This is the regulatory corridor and the central defining characteristic of this model; $r_{j,World}$ and $r_{i,World}$ are its walls. As defined in section III.1, this set of regimes that are possible under such potentially ambivalent international regulation is the complexity of regulation that I seek to explain by means of economic analysis of rationally acting states. By assumption, such complexity creates uncertainty. The greater the bounded set of potential regimes, the greater is this uncertainty as it increases room for regulatory arbitrage and evasion behavior.

This complexity may arise due to deviations from a coherent international accord or might already be built into the accord. These two possibilities are equivalent in outcomes in my model world and might only differ if there are penalties for deviating ex post. This might make it worthwhile to put effort into increasing room for maneuvering under the accord ex ante. As both yield the same result, I abstract from differentiating between ex ante and ex post complexity for the remainder of the model.³¹

If we assume that there are no direct penalties for deviation from an international accord, country i would simply deviate to its preferred level of regulation r_i^* and the international regulation would not have any effect.

However, as argued by critics of complexity in banking regulation, such complexity itself can make banking crises more likely or increase the costs of crises in general. Thus, I treat this complexity as a factor that inflates the costs based on how wide the regulatory corridor is (measured by how much regulatory regimes deviate, how much ambiguity is in the international regime).

³¹ It is very likely that ex post complexity has a slightly different effect than ex ante complexity. Ex post complexity means that states deviate from a given accord. This will disproportionately increase monitoring costs for single countries that would only have to look into one accord in case of ex ante complexity. The abstraction from penalties is also a strong assumption as there is always the implicit penalty that others leave the accord or even explicit penalties such as in the EU.

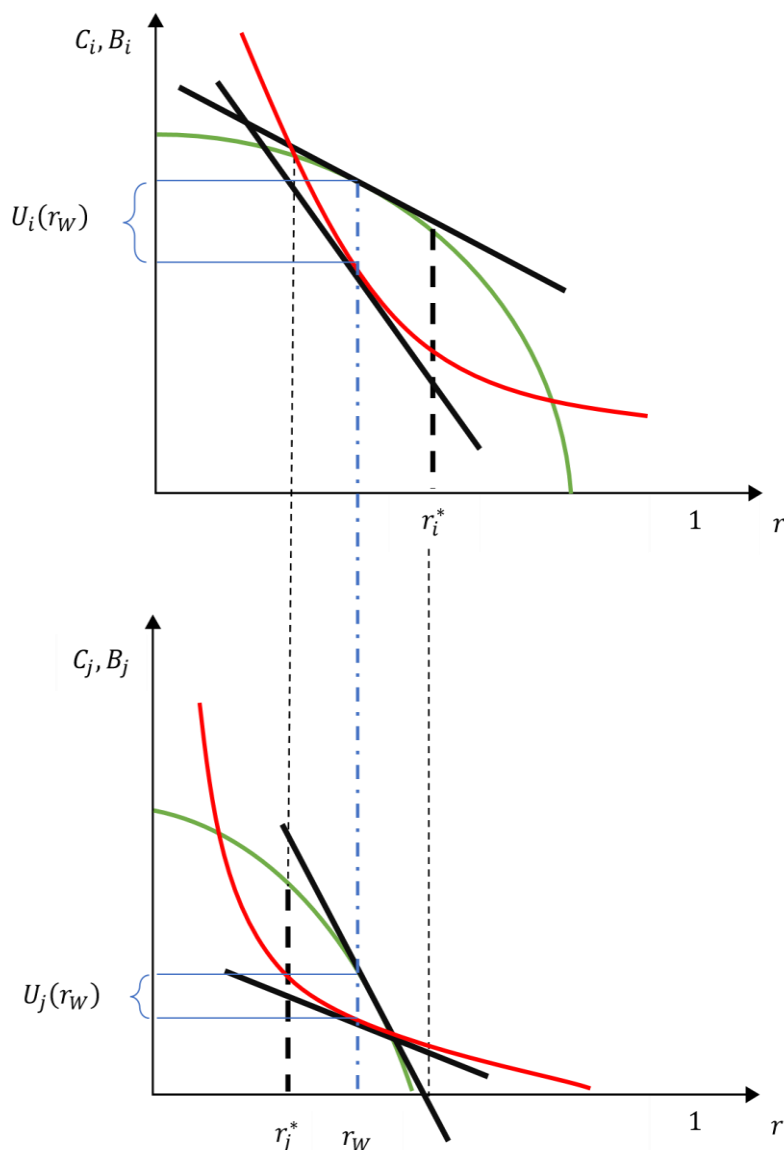


Figure 4: In contrast to Figure 3, this graph shows a world where i and j agree on one level of regulation r_w . The dotted blue line indicates this level of regulation. $U_i(r_w)$ and $U_j(r_w)$ represent the respective utility levels of both players under this coherent international regime.

To express this mathematically, I introduce the function $\gamma(\cdot)$, which depends on the distance between the upper and the lower bound of the set $[r_{j,World}, r_{i,World}]$. This function $\gamma(|r_{i,World} - r_{j,World}|)$ has the property that it is increasing and, for simplicity reasons, I assume that it is linear for positive distances:³² $\gamma' \geq 0$ (with $\gamma'(0) = 0$), $\gamma'' = 0$. Another property of this function is that $\gamma(|r_{i,World} - r_{j,World}|) \geq 1$ with $\gamma(0) = 1$ (the latter ensures that coherent regulation has no

³² This linearity assumption can be dropped to account for smaller effects if deviations are minor.

effect on costs). The resulting factor $\gamma(\cdot)$ is multiplied with the respective cost functions, representing the inflation of costs due to complexity in the international regime. This argument is depicted in Figure 5.

As the cost function in my model represents all direct costs that are associated with banking (such as bail outs or supervision costs), the complexity as defined here affects this part of the equation. A basic assumption of my model is that complexity would result in increased room for loopholes, regulatory arbitrage, and other adverse effects that would all be captured by a cost function. The γ -function only takes this out of the actual cost function to make this visible. The benefits of introducing complexity – i.e., the opportunity to come closer to an optimal level of regulation while not having to convince others to adopt the same regulatory framework – are displayed within the benefits function as benefits are not inflated.

A state i that faces no direct consequences from deviating from an agreed level of regulation $r_{World}^C \in (r_j^*, r_i^*)$ by using a new level of regulation $r_{i,World} \in [r_{World}^C, 1]$ faces the new optimization problem

$$U_{i,World} = B_i(r_{i,World}) - \gamma(|r_{i,World} - r_{World}^C|)C_i(r_{i,World})$$

when disregarding potential deviations by j . This new optimization problem yields the result that i 's utility is maximized when setting regulation such that it solves the equation

$$0 = B'_i(r_{i,World}^*) - \gamma'(|r_{i,World}^* - r_{World}^C|)C_i(r_{i,World}^*) - \gamma(|r_{i,World}^* - r_{World}^C|)C'_i(r_{i,World}^*) \quad (3)$$

Remember that I treat i as the country whose regulatory optimum corresponds to a higher value of r than j 's.

The following arguments equivalently apply to a country j that prefers looser regulation. We can rewrite (3) as

$$\frac{B'_i(r_{i,World}^*)}{C'_i(r_{i,World}^*)} = \underbrace{\frac{\gamma'(|r_{i,World}^* - r_{World}^C|)C_i(r_{i,World}^*)}{C'_i(r_{i,World}^*)}}_{\leq 0} + \underbrace{\frac{\gamma'(|r_{i,World}^* - r_{World}^C|)}{\geq 1}}_{\geq 1} \quad (4)$$

This means that country i might be able to achieve a better ratio between marginal benefits and costs by deviating from the accord that sets regulation at r_{World}^C . In fact, the only case when not even a small deviation from r_{World}^C is worthwhile is when $r_{World}^C = r_i^*$.³³ This means that in any case, country i will either get its way and influence the worldwide standard so much that it has no incentive to deviate or it will accept increased costs through complexity in exchange for coming closer to its optimal level of regulation. Note that mathematically this can go as far as setting $r_{i,World}^* > r_i^*$. This would be an exceptional case in which the domestic reaction to movements from foreign partners would have to overcompensate their behavior.

As an important side-remark, there is no direct comparison between a world without complexity and a world with complexity possible in terms of total utility. By generally allowing for complexity in my model, I rule out that a credible non-complex option exists (assuming that not all countries share the same preferences). This seems to be very much in line with reality where exceptions in accords, ex post deviations from accords, and similar complexity-enhancing behaviors exist. A state could prevent complexity by simply following another state, but I showed that this is not welfare-maximizing for this state and, thus, not credible.

The only other way a country could avoid complexity would be to close capital markets and to implement its preferred level of regulation under these circumstances. This outside option would mean that states would not engage in international negotiations at all. I disregard this possibility for most of my model as it rarely occurs in reality, especially given my focus on developed, Western countries, whose capital markets are typically open. Hence, there is only a world where we have complexity or can choose to follow someone to stop complexity – closing capital markets is ruled out.

This general argument gains validity when we do not only look at country i and see country j as a passive player after the deal is concluded. Obviously, country j will analogously maximize its utility by deviation, but in the other direction and depending on i 's expected deviation – simple

³³ This is a circulatory argument and just for illustrative purposes.

game theory would give us a value for the resulting levels of regulation if we would base these considerations on actual functions. However, the Envelope Theorem already tells us that the essential optimization problem will remain the same:

$$\frac{B'_i(r_{i,World}^*)}{C'_i(r_{i,World}^*)} = \frac{\gamma'(|r_{i,World}^* - r_{j,World}^*|)C_i(r_{i,World}^*)}{\underbrace{C'_i(r_{i,World}^*)}_{\leq 0}} + \underbrace{\gamma(|r_{i,World}^* - r_{j,World}^*|)}_{\geq 1} \quad (5)$$

This means that in an otherwise anarchic world, with two acting countries with diverging benefit and cost functions of banking regulation, complexity will emerge even though it increases the expected costs of banking. This yields the following proposition.

Proposition 1. *Two otherwise identical countries in an open capital market with preferences in banking regulation such that $r_i^* \neq r_j^*$ will create an international regulatory framework that is a bounded set of regulatory regimes: $[r_{i,World}^*, r_{j,World}^*]$, which represents a regulatory corridor.*

This provides us with a new justification for why states might introduce inconsistent banking regulation aside from collusion. Even if one country had no incentive to deviate from a certain level of regulation, the other country would deviate and create complexity, which would result in a reaction by the first country.

Later, I will examine the intertemporal case in which γ changes over time as it basically represents expectations over how complexity affects uncertainty and the resulting costs.

III.2.3.1 Social planner

We saw that individual states might implement regulatory corridors in order to improve their own utility and that it is unlikely that no complexity occurs at all. It is still possible that this result does not hold if a central authority coordinates decision-making – in its most extreme form, this would be a social planner. For example, in a setting where common regulation is negotiated in a repeated manner and with support by powerful institutions, it might still be the case that complexity and the resulting efficiency losses can be avoided. If that were the case, that would actually imply that regulatory corridors are not efficient and only the result of a dilemma of states

that could be resolved by a central authority.³⁴ To check for that possibility is important as integration would be the most obvious solution to a perceived coordination problem as outlined before. In this case we would simply find ourselves in a Prisoners'-Dilemma-like situation, which states could overcome by proper coordination or submission to a superior planner. In this case, complexity would simply be the result of coordination failure. My model, in contrast, is supposed to show that complexity can be welfare-enhancing. The following argument shows that even a social planner would use the opportunity to introduce complexity. However, it does not provide a baseline or comparison for the individual actor model.

In reality, the Bank for International Settlements and the Basel Committee on Banking Regulation might come fairly close to facilitators of regulatory harmonization, while the European Commission and the European Central Bank in the European Union might actually come relatively close to central regulatory and supervisory authorities. Hence, this argument also has implications for thinking about their behavior in regulatory harmonization negotiations.

In a world where regulation is not necessarily coherent, a social planner also faces the trade-off between giving the states opportunities to have a regulatory framework that accounts for their individual institutional settings and coherence to minimize costs induced by complexity.

We know from equation (2) that a social planner would choose a level of regulation that results in collective marginal costs equating collective marginal benefits in a world where the planner can only choose one level of regulation. A utility function that allows for individual regulation, in contrast, is

$$U_{World}^C = B_i(r_{i,World}) + B_j(r_{j,World}) - \gamma(|r_{i,World} - r_{j,World}|)[C_i(r_{i,World}) + C_j(r_{j,World})] \quad (6)$$

³⁴ This has implications for domestic regulation as a government could be seen as such a central planner.

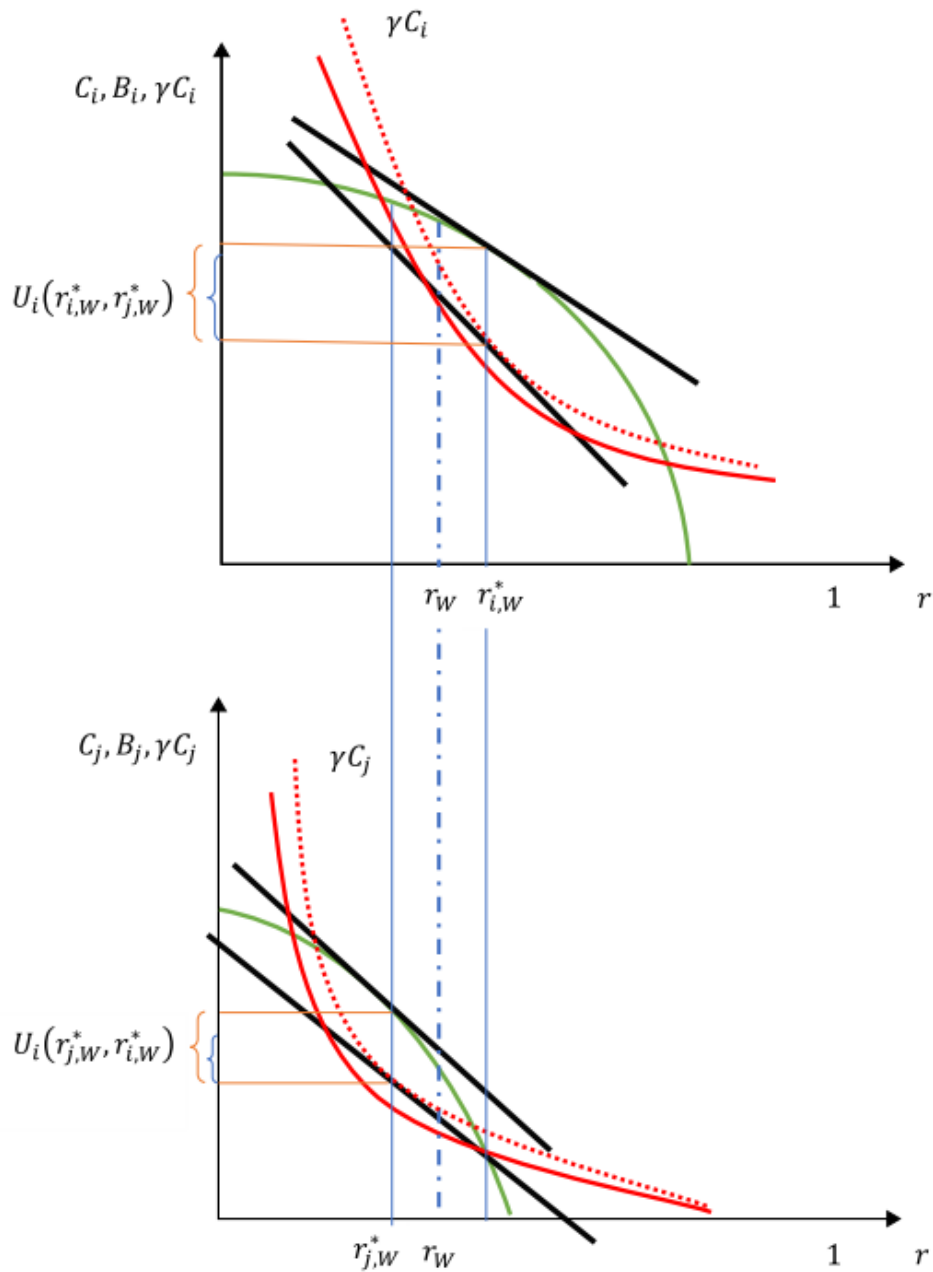


Figure 5: This graph shows the essence of the model and of Proposition 1: Utility for states is higher when they agree on a set of rules $[r_{i,W}^*, r_{j,W}^*]$, which means that the international regulatory regime is complex in the sense of my model. This is welfare-maximizing compared to the world without complexity (indicated by the blue bracket that comes from Figure 4), even though this complexity inflates costs. The costs under complexity are indicated by the dotted red curve. Utility now depends on the upper and the lower bound of the set of regulations and is depicted by $U_i(r_{i,W}^*, r_{j,W}^*)$ and $U_j(r_{j,W}^*, r_{i,W}^*)$ respectively. One can see that, despite the higher absolute costs of regulation at any given level of regulation, net utility for both parties is higher than under a coherent regime as depicted in Figure 4.

The social planner now sets two levels of regulation. To calculate this, I assume that the planner will always give exactly the same treatment to both countries by just calculating an optimal deviation d from a hypothetical single level of regulation r_{World}^C as determined by (2). This is a rather harsh assumption since it rules out the possibility that large deviation towards one player's preferences and only small deviations towards the other are worthwhile for the planner. For example, it seems reasonable to assume that deviations towards stricter regulation are 'better' than deviations towards looser regulation. Investigations that employ explicit functions that fulfil the assumptions of this abstract model might account for that.

Due to the assumption that i is the player with preference for high levels of regulation, $r_{i,World}^C = r_{World}^C + d$ and j as a low regulation actor gets $r_{j,World}^C = r_{World}^C - d$.

$$U_{World}^C = B_i(r_{World}^C + d) + B_j(r_{World}^C - d) - \gamma(2d)[C_i(r_{World}^C + d) + C_j(r_{World}^C - d)] \quad (7)$$

Given that r_{World}^C is our baseline here, optimization with respect to deviation from this baseline optimum, d , yields that in optimum

$$\begin{aligned} B'_i(r_{World}^C + d) - B'_j(r_{World}^C - d) \\ = 2\gamma'[C_i(r_{World}^C + d) + C_j(r_{World}^C - d)] \\ + \gamma(2d)[C'_i(r_{World}^C + d) - C'_j(r_{World}^C - d)] \end{aligned} \quad (8)$$

This equation would only be fulfilled for $d = 0$ if

$$B'_i(r_{World}^C) - B'_j(r_{World}^C) = C'_i(r_{World}^C) - C'_j(r_{World}^C) \quad (9)$$

This only holds if i and j yield the exact same ratio between marginal costs and marginal benefits at r_{World}^C – a contradiction to the basic assumptions of the model.³⁵

³⁵ This is derived from the results from the baseline model, the assumptions on the slope of cost and benefit functions, and equation (2).

Hence, a social planner will also choose complex arrangements - in the sense that multiple regulatory regimes are possible - and the optimal deviation from the coherent level (d^C that solves (9)) will be positive as long as the planner rules over an international rule-making process, which involves countries that do not share exactly the same institutional framework.

Proposition 2. *A social planner that can impose regulation on two otherwise identical countries with open capital markets and preferences in banking regulation such that $r_i^* \neq r_j^*$ will not choose coherent regulation even if leaving room for national discretion is costly.*

This model shows that one can justify complexity in international banking regulation without falling back on any explanations based on lobbying for inefficient complexity in the international sphere. Simple welfare maximization can explain complex systems of regulation being superior to coherent regulatory frameworks. This might even explain domestic regulatory complexity that emerges through the political process where actors or agencies with different preferences negotiate.

III.2.4 Intertemporal case

The previous section made the point that a rationale for complex regulation exists even if it comes at certain costs. Such a static model is good for making such a general point (also with regard to a social planner) but only a more refined model, namely one that covers multiple periods, can evaluate what might feed into such complexity aside from the basic rationale that diverging preferences can cause some complexity. While the reliance on abstract preferences makes estimating levels of regulation impossible, an intertemporal examination can at least tell how certain parameters would influence regulatory harmonization. I will examine two parameters in detail: discount factors and expectations.

Regulating banks is not a one-shot process that simply sets some level of regulation forever; it is dynamic. Negotiations of new regulation often take years before signatory states start implementation, for example. After regulation is put into place, it takes time for it to take effect in terms of both benefits and costs. The former is probably realized earlier than the latter. This is not because regulation comes for free at the beginning but because the short-term effects are probably more likely to show in the benefits function than in the cost function. Very strict regulation would show relatively high short-term reductions in benefits in terms of less credit or

lower economic activity (either directly influenced by the regulation or through increased administrative burdens or so). In the logic of the model, strict regulation would reduce costs in the sense of the cost function, which among others represents expected crisis costs. Such crises are likely to occur later than the benefits as they result from investments that feed into benefits. For example, even with no regulation at all, a crisis tomorrow would be unlikely – a crisis in a couple of years would probably be inevitable. There is some time-dimension to regulation, which requires taking discount factors into account.

This refrains from considering direct costs of supervision but stricter regulation is not necessarily associated with higher direct costs as strict but simple supervision could even lower such costs. The simple logic of the model helps us navigating through this: benefits from banking and costs both decrease when regulation gets stricter (not necessarily at the same rate though). This assumption essentially implies that an increase in supervisory costs would always be matched by a greater reduction in costs due to expected crises. Note that this has no influence on the benefits function and the effects of stricter rules on these benefits. The ‘cost’ of stricter regulation in terms of less economic activity is different from the costs captured by the $C()$ -function.

Expectations might play a role as well when regulation is adjusted or implemented with a time-lag. This is particularly the case as the γ -function that accounts for costs from complexity is based on expectations. Complexity creates uncertainty and the effects of uncertainty can only be expected but not exactly calculated by definition.

Furthermore, history does not stop at the point when regulation is agreed upon. New optimal regulatory regimes might emerge and a new regulatory cycle might begin after a crisis happened that changed beliefs or preferences that formed the previous accord. A regulatory cycle in my model takes place between the negotiations of new regulatory regimes and their overhaul due to failure, crises, or changes in preferences. Such a cycle can include numerous periods and is ended by a breakdown of a regulatory framework as has happened numerous times in recent decades.³⁶ My model will stay within one cycle and cover multiple periods that are all based on the same fundamentals. The cycle is depicted in Figure 6.

³⁶ Think of the different international regulatory regimes Basel I and III. They followed sudden realizations that the old framework was inadequate and preferences for regulation shifted substantially.

III.2.4.1 Discounting future crises and adding expectations

The model so far has made the argument for a rationale how differences in country preferences can lead to complexity and, thus, uncertainty in international banking regulation frameworks. This is probably the most important insight as it expands the set of potential reasons for regulatory corridors beyond regulatory capture and other non-state-centric explanations.

However, this model did not include any room for adjustments over time – neither with regard to the general regulatory regime when much of the costs and benefits are realized only in the distant future nor with regard to expectations about the inflating factor of costs to regulation due to complexity, γ . Analysing these two potential changes over time will make the model more realistic and will give us a better understanding of what might inform complexity decisions aside from the basic argument that complexity might be welfare enhancing by increasing flexibility. The most interesting part of this is that we can introduce potential rationales for not adhering to the rules after some time due to changing expectations about the costs of such moves. In line with Minsky's 'financial euphoria' (Minsky, 1992), this would result in 'regulatory euphoria'.

The setup of this model is based on the static model but adds some assumptions and features. This includes the establishment of multiple periods as basis of decision-making and, correspondingly, a non-negative discount factor δ_i for future costs and benefits of country i . I treat the discount factors as exogenous and identical for both players. Hence, $\delta_i = \delta_j = \delta$. A second feature of this multi-period approach is that I can introduce a time-lag between the realization of benefits and costs in banking regulation as it is likely that new rules have little direct impact on risks of banking crises – at least not as immediately as on benefits.³⁷ A third new feature of this intertemporal model is a potential change in expectations about how much costs are inflated by complexity. While assuming that cost-benefit analyses are based on fundamentals that do not (or only slightly) change within a regulatory cycle, the inflating factor γ is purely based on expectations as it represents uncertainty. Thus, including a change of these expectations in considerations regarding the model seems straightforward. This change (most likely a reduction in expected inflation of costs) might also show reasons for ex post deviations from an accord.

³⁷ Costs, especially due to crises, are the result of previous investment decisions. If benefits and costs would be realized at exactly the same time, regulation and indeed rational banking behavior would be much closer to a hypothetical optimum.

When combining decision-making based on an infinite number of periods and a time-lag in when costs are realized, a new equilibrium might emerge. In the following, I will first introduce an infinite time horizon model with constant expectations about uncertainty due to complexity. This model is based on previous static models but refers to an infinite number of periods. Most likely, this will improve applicability. Rules are usually not created in a way that they keep the system safe for a limited amount of time but are meant as general principles to be applied in order to ensure a continuous functioning of markets even though it is likely that they will fail at some point. Second, I will discuss potential changes in expectations about uncertainty based on the results from the model. As soon as stability becomes more resilient in the sense that the regulatory cycle lasts longer, expectations about costs from complexity might deteriorate. Thus, the cost-factor would become less important for determining regulation and less coherence might result as states could come closer to their optimal level of regulation by resolving the trade-off differently. This analysis is based on a previously discussed Minskyan idea that stability might yield instability. This would provide an explanation for how Minskyian risk attitude changes might be translated into changes in regulation – not only into bank behavior. This would mean that regulators might face a pressure to lower coherence of regulation as stability in financial markets lasts longer resulting in greater complexity.³⁸

III.2.4.1.1 Infinite time horizon with constant expectations

Regulation of banks is likely to be rather made for an unforeseeable, probably infinite time horizon than for just a number of periods. It seems unlikely that regulation is made with an implicit or explicit sunset clause. Much more likely, negotiators will discount future periods and also make use of the time difference between the realization of benefits and costs when introducing new regulation.

In this section, I will introduce an infinite time horizon utility function, based on the formerly motivated static one. A special feature of this is that it works with a time lag in realization of costs. This means that in some period -1 an agreement is formed, the new regulatory regime takes effect, and implementation happens (I abstract from time lags in this process). In the first period, 0 , only benefits are realized as risks must be built up before they can be realized. Costs occur from

³⁸ See chapter I for that.

period 1 onward. The discounting happens through the formerly introduced factor $\delta \geq 0$: the next period is discounted by $\frac{1}{1+\delta}$. This is subsequently called β for convenience.

The intertemporal optimization problem (indicated by I in the regulation parameter) of the respective country i would look like that:

$$U_i(r_{i,World,I}) = \sum_{t=0}^{\infty} \left[\frac{1}{(1+\delta)^t} B_i(r_{i,World,I}) \right] - \sum_{t=0}^{\infty} \left[\frac{1}{(1+\delta)^{t+1}} \gamma(|r_{i,World,I} - r_{j,World,I}|) C_i(r_{i,World,I}) \right] \quad (10)$$

For comparison (and similar to the static case), look at the optimum without complexity (i.e. i can dictate the regulatory regime, $\gamma(0) = 1$):

$$U_i(r_{i,World}) = \sum_{t=0}^{\infty} [\beta^t B_i(r_{i,World,I})] - \sum_{t=0}^{\infty} [\beta^{t+1} C_i(r_{i,World,I})] \quad (11)$$

Which yields the optimal ratio between marginal benefits and marginal cost of

$$\frac{B'_i(r_{i,World,I}^*)}{C'_i(r_{i,World,I}^*)} = \beta \in (0,1) \quad (12)$$

The optimal ratio is lower than the one in the static model for $\delta > 0$. This is because only if large discount factors β (this means that the implicit interest rate δ is very low and converges towards 0) play a role, the regulatory regime converges towards the optimal ratio of the static model, which would yield a result $\frac{B'_i(r_{i,World,I}^*)}{C'_i(r_{i,World,I}^*)} = 1$. This result comes from the fact that future costs are discounted.

Only for a world with $\beta = 1$, it is optimal that players choose to implement their preferred regulation from the static case as this makes future costs equivalent to present costs. This means that only in a world that converges towards the static model, states would potentially choose a

regulatory regime that results in marginal cost being equal to marginal benefit. As soon as benefits are realized earlier than costs and the future is discounted, they have an incentive to reduce regulatory burdens. Even more so if preferences of countries diverge a lot and r_i and r_j move relatively freely as the static model has shown already.

In contrast to the case where i can choose regulation, the optimization of its regulatory settings with an independent peer j based on utility function (10) would yield a different result:

$$\begin{aligned} \frac{\partial U_i}{\partial r_{i,World,I}} &= \sum_{t=0}^{\infty} [\beta^t B'_i(r_{i,World,I})] - \sum_{t=0}^{\infty} [\beta^{t+1} \gamma'(|r_{i,World,I} - r_{j,World,I}|) C_i(r_{i,World,I})] \\ &\quad - \sum_{t=0}^{\infty} [\beta^{t+1} \gamma(|r_{i,World,I} - r_{j,World,I}|) C'_i(r_{i,World,I})] \stackrel{!}{=} 0 \end{aligned} \quad (13)$$

Renaming the discount factor $1 > \frac{1}{(1+\delta)} = \beta > 0$ again and rearranging the equation yields

$$\begin{aligned} \frac{\sum_{t=0}^{\infty} [\beta^t B'_i(r_{i,World,I}^*)]}{\sum_{t=0}^{\infty} [\beta^{t+1} C'_i(r_{i,World,I}^*)]} &= \gamma(|r_{i,World,I}^* - r_{j,World,I}^*|) \\ &\quad + \frac{\gamma'(|r_{i,World,I}^* - r_{j,World,I}^*|) \sum_{t=0}^{\infty} [\beta^{t+1} C_i(r_{i,World,I}^*)]}{C'_i(r_{i,World,I}^*)} \end{aligned} \quad (14)$$

Further simplification leads to a result that we can compare to former optimal levels of regulation:³⁹

³⁹ This simplification makes use of geometric series, which means that this equation cannot simply be translated into a finite-horizon problem.

$$\frac{B'_i(r_{i,World,I}^*)}{C'_i(r_{i,World,I}^*)} = \underbrace{\beta}_{0 < \beta < 1} \underbrace{\gamma(|r_{i,World,I}^* - r_{j,World,I}^*|)}_{\geq 1} + \underbrace{\frac{\gamma'(|r_{i,World,I}^* - r_{j,World,I}^*|)C_i(r_{i,World,I}^*)}{C'_i(r_{i,World,I}^*)}}_{\leq 0} \underbrace{\left(\frac{1}{1-\beta} - 1\right)^2}_{\frac{1}{1-\beta}} \quad (15)$$

This result opens many avenues for comparative statics and interpretations. The outcome resembles that from the static equation (5) but is more complicated due to the discount factor. The ratio between marginal benefits and marginal costs is positively dependent on β , which already indicates that a greater discount factor will increase the optimal ratio between marginal benefits and marginal costs for i , which in turn means that the optimal regulatory regime for i gets weaker (lower $r_{i,World}^*$, closer to $r_{j,World}^*$) when the discount factor increases. This is again not surprising as costs are realized in the future and benefits already occur today, which also affects the inflating factor γ .

Another result is that both the effects of complexity (γ) and the cost effects on the optimal result are weighted by the discount factor. Small discount factors will let the optimal ratio decrease also through their effect on the complexity and the cost part of this function. A small $\beta (= 0 + \epsilon)$ would result in a very low ratio between marginal benefits and marginal cost. This means that regulation would be very prone to failure and skewed towards gains in early periods as future returns and costs are worth much less than present benefits.

The remaining effects are similar to the static case: high costs or a steeply increasing complexity cost function ($\gamma'(\cdot)$ high) make a move by i (who prefers higher regulation based on cost and benefit functions) towards j 's lower preferred level of regulation more likely. A steeper cost function ($C(\cdot)$) reduces this incentive as it increases the cost from loosening regulation.

To sum this up, the intertemporal model with constant expectations shows two major results. First, a time lag between realization of benefits from regulation and costs unsurprisingly results in weaker regulation. Second, intertemporal decision-making yields similar qualitative results as the static case: no complexity is only a solution to extreme boundary cases, which cannot be reached as soon as both players show different preferences and can make decisions by

themselves. This remains valid for both an agreement that sets a certain level of regulation or two free-floating countries that simply optimize their regulatory response.⁴⁰

Proposition 3. *Two identical countries with diverging preferred regulatory regimes that find themselves in an intertemporal regulation harmonization negotiation whose benefits are realized earlier than its costs will (1.) implement weaker regulation than in a static case and (2.) widen the regulatory corridor compared to a static case the more the future is discounted.*

Lastly, this intertemporal model – just as all other models here so far – operates with the assumption that capital markets are open. It would further complicate the model if we would include the option of closing capital markets and just implementing unilateral regulation for the domestic market. This option was ruled out by assumption.

III.2.4.1.1 Intertemporality with changing expectations

The intertemporal model has so far remained static with regard to expectations. All functions staying constant is particularly unrealistic for the uncertainty function $\gamma()$ as this function is determined by expectations about something that is unknown: uncertainty due to complexity. All observable cost factors are part of the normal cost function, complexity inflates these costs in an uncertain way that can only be guessed. I will change this particular assumption in the following in order to discuss changes in the expected costs. It remains a rather strict assumption that benefit and cost functions do not change over time within one cycle of regulatory decision making but this is a necessary simplification. All models so far only refer to one regulatory cycle such that all functions could change when the next cycle begins – for example, after a crisis.

Expectations of costs from uncertainty are formed at the beginning of a regulatory cycle. As a regulatory cycle starts after a previous one was ended by a crisis or another major event, it seems reasonable to assume that awareness for potential problems due to failure of regulation is highest at this zero hour when a new regime is formed. Such awareness and the associated expectations deteriorate as the cycle matures and stability returns to being the normal state of the world. This

⁴⁰ Of course, this does not hold if one player is extremely powerful and can simply impose a regulatory regime on the other. This model here operates in a system of anarchy and not with a hegemon. Yet, even with a hegemon, there will be tensions to deviate from an agreement in the discrete field of banking regulation. A potential solution to any of such deviations would be a Sentinel that supervises the supervisors as suggested by Barth, Caprio, & Levine (2012a).

can happen through two channels: First, the absolute factor $\gamma_t(\cdot)$, which represents the expected inflating factor in period t , is reduced for every combination of regulatory regimes such that $\gamma_t(x) > \gamma_{t+1}(x)$ for all t and $x \in [0,1]$. Second the slope of the expectations function might change over time: $\gamma'_t(x) > \gamma'_{t+1}(x)$ such that greater complexity has a lower expected cost effect.

The effects of these two channels on i 's optimal regulatory regime in their intertemporal optimization problem would be to loosen regulation in general due to the absolute effect (this would also apply to j , who prefers looser regulation in general) as this reduces expected costs from crises. On the other hand, i 's preferences for stricter regulation could be better served in a setting in which higher regulation has a lower effect on costs through complexity. So, a lower slope (γ') incentivizes i to come closer to following its preferences from a simple cost-benefits analysis and worrying less about the adverse effects this has on complexity. The same argument applies to j , just in the other direction.

This means that simply by changing expectations about something that cannot be foreseen – effects of complexity – might change regulatory preferences of states over time.

Assume that states come to an agreement on regulation in order to either provide clarity about what others do or to lock the status quo as a self-restraint mechanism to avoid the slow deterioration of regulatory prudence over time. As I assume that there is no hegemon, the agreement is unlikely to deviate much from their optimal regulatory regimes at the point in time it is concluded. This would explain ex ante complexity in regulatory agreements.⁴¹ Simple changes in expectations as described before would lead to changes in optimal regulatory levels and potentially create pressure to adjust the agreed regulatory regime. In an anarchic world without enforcement mechanisms, such adjustments could happen at any time and one reason for forming an agreement could be to avoid such adjustments. It would be clear that a country that deviates from an agreement must expect its opponents to deviate in turn and the agreement would break down. Yet, this might be worthwhile if the gains from deviation exceed the cost from having no influence over other countries' regulatory regimes anymore. In a more law-abiding environment, pressure could rise to change the international accord. Overall, the ex ante complexity of an

⁴¹ Interdependencies or contagion between the countries might lead to incentives to bargain for closer alignment. But I abstract from that mechanism.

agreement might not suffice anymore γ would deteriorate over the course of a regulatory cycle. This results in corollary 1.

Corollary 1. *A downward shift in the expected cost function $\gamma(\cdot)$ will lead to a change in optimal regulation for each country. This change would lead to higher degrees of complexity.*

This corollary illustrates an important point of the intertemporal model: expectations have a direct impact on regulatory optima. This means that either events that shift expectations or gradual changes in expectations influence optimal levels of regulation even if we assume that benefit and cost functions do not change. A period of stability might increase the desire to move away from previously agreed harmonization. This could either happen through renegotiations of accords or simply by ex post deviations from accords.

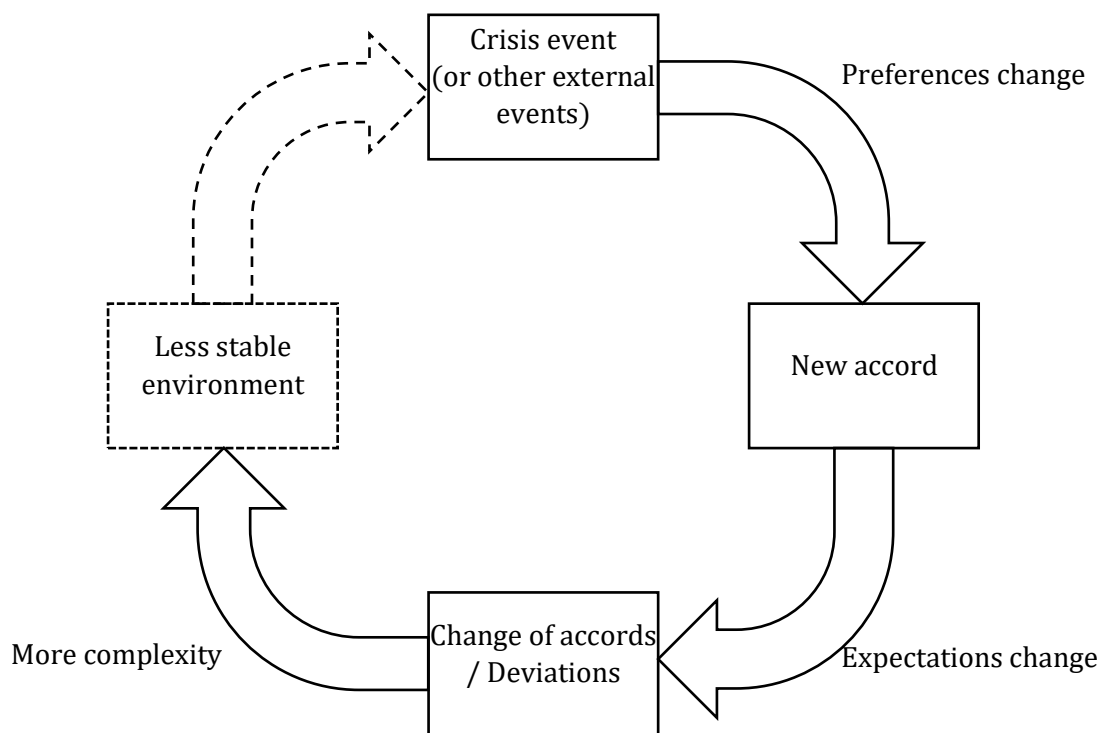


Figure 6: A schematic depiction of the complexity cycle that shows how changes in expectations might lead to changes in regulation and more complexity that then affects stability.

By including such a subjective element into decision-making that eventually has an effect on financial stability and thus costs, we found a rationale for a Minskyan development in regulation. Minsky's argument rather referred to behavior of financial markets in general and how they might translate long periods of stability into euphoria that then results in the built-up of bubbles and eventually financial crises. This result would provide a mechanism how this might work in the special field of financial regulation. A deterioration in expected costs (or cost inflation) from complexity would mean that for any given complexity level, which is expressed as the distance between the boundaries of the regulatory regime, expected costs would shrink in case of euphoria – meaning that current stability is extrapolated to future periods.

Countries in regulatory euphoria would have a tendency towards adjusting their regulatory frameworks closer to their preferred levels. The inflating factor would play an ever-smaller role and only the respective country's own cost-benefits calculation would matter in the long run. In its extreme, the inflating factor γ would go down to 1 and regulatory harmonization would be abolished over time through simple deviations from the accords or exceptions and extensions that fit into at least one country's agenda.

While full rollbacks of harmonization are unlikely, some overhauls can be observed over time. A very obvious example for that is the overhaul of Basel I in the late 1990s that incorporated the opportunity for banks to use internal ratings-based models instead of the usual standardized approach to calculate regulatory capital requirements. The official intention was to increase the scope of Basel rules from only covering credit risk to also incorporating market risks.⁴² Yet, what could be perceived as a strengthening of regulatory prudence was used to introduce the use of internal models, which gave banks more discretion and were later criticized as problematic for financial stability (see criticisms in chapter II). This means a switch from relatively little complexity under the standard approach towards the vastly more complex internal option. Essentially, this means that banks could re-calibrate risk precautions to their portfolios and, thus, enjoy more flexibility and could give out more loans. The regulatory regime became less coherent. It is not clear how much of this switch has to do with the processes evaluated here. A clear examination of the mechanisms behind the switch towards internal models is difficult as much

⁴² Credit risk refers to non- or underperformance of assets with respect to the individual asset, market risk rather refers to fluctuations in markets that influence the value of an asset.

else happened in the time between Basel I and its first overhaul. This is a major problem when trying to find cases that could support the claims from this part of the model.

On a general level, the model seems to fit to other real-world developments. After the Financial Crisis when expectations were re-calibrated (in my model world this would be a new regulatory cycle) and Basel III was negotiated, the potential complexity was reduced again by setting relatively strict precautions against too much flexibility for banks in optimizing their regulatory burden (a narrowing of the regulatory corridor) such that the capital requirement effects of using internal models compared to the standardized approach were reduced. Such developments can be explained by using the intertemporal version of the model but certainly, such anecdotes do not replace a clear, structured examination of such developments. The empirical part will include an attempt to clearly identify the mechanisms from Proposition 3 (even though discount factors are hard to estimate) and especially Corollary 1. Unfortunately, this attempt will fail and this part of the model cannot be supported by the qualitative empirical examination in chapter IV. Reasons for that will also be discussed there.

To sum this up, the intertemporal part of the model brings us closer to a model that evaluates the state-centric determinants of complexity. The importance of the future compared to today certainly is a factor that will play into policymaking and influence rational decision-making by states. It would not be regarded as good statecraft to trade current prosperity for future financial instability but there are few safeguards against states behaving this way. Furthermore, this model shows how completely subjective expectations can have an impact on regulation over time. Thus, this part of the model refines our understanding of what might influence levels of regulation.

III.3 Summary and discussion

This model was about showing why complexity in financial regulation might be a rational outcome for states. This refers to complexity of international regulatory harmonization attempts in terms of rules that leave room for national discretion in the accord *ex ante* or deviations from harmonization by states *ex post*. In either case, the subject of research has been the distance between two regulatory extrema that represents such complexity – a regulatory corridor. An important feature of this definition is that it looks at complexity that *effectively* affects benefits and costs from a capitalist banking system. Everything can be framed more complex but this does

not necessarily have any effect on the outcome of regulation, this is corrected through the thorough outcome-based definition of complexity as regulatory corridors in section III.1.

The first important result of this model is that states that face benefits but also costs from having a private banking system would only partially harmonize their regulatory systems even if this inflates expected costs through increased financial instability. They would only fully align their regulatory regimes if their preferences – expressed by their benefit and cost functions – would be the same but then they would not need to coordinate on regulation at all.

In a static model, diverging preferences of states – no matter where they come from – would make it rational for them to introduce a regulatory corridor instead of one fully harmonized regulatory regime. This way they can come closer to their individual optimum of regulation. They essentially face a trade-off between bringing the international accord close to their preferred regulatory regime and making it coherent, which would reduce financial instability by assumption. The solution to this trade-off is the introduction of a set of regulatory regimes possible under the accord such that some harmonization is achieved but some flexibility still prevails. This result is not too surprising and even rather intuitive. Yet, it provides a rigorous argument for why complexity is a likely outcome of regulatory harmonization attempts and not necessarily driven by regulatory capture of internationally active lobbyists. This remains the case in qualitative terms when a central planner takes over, meaning that this is not just a coordination problem.

Second, I show in an intertemporal model how some factors might influence the magnitude of complexity and what might change in a dynamic environment. Preferences in favor of present economic gains in contrast to discounted future costs from crises might lead rule-makers towards more complex arrangements. They would come closer to countries' preferred levels of regulation as they do not care that much about the future inflation of costs that could be the result from such moves. Furthermore, the expected costs from complexity-factor γ , which is an increasing function of complexity, is likely to be based on expectations. This insight combined with my model provides an explanation for how changing expectations, for example due to financial euphoria, could play a role in loosening of regulatory harmonization. This would be a special version or extension of Minsky's Financial Instability Hypothesis.

While Minsky looks at financial markets as a whole and how sustained stability could lead to euphoria that then results in financial instability, my model shows a way of how such euphoria

might enter regulatory harmonization. Regulation should actually prevent excesses that would occur in financial euphoria. Yet, I show how regulation itself might suffer due to euphoria in a sense that states might expect to be able to manage less harmonization. Deviations from the initial accords – that can already exhibit complexity – would increase instability and exacerbate the problem of financial euphoria as banks would get more opportunity to circumvent regulations.

The model certainly has some shortcomings and neglects some important developments. The most important one is a crucial reason for states to enter regulatory harmonization negotiations: creating a level-playing field. This might be somehow grasped by a function that affects benefits from regulation and depends on how similar regulation is to that of the respective country. Spelling this out would further complicate the regulatory corridors model though.

A second limitation of the model is that it does not fully account for contagion effects. Country A that expects to suffer from a crisis in country B might be willing to sacrifice some regulatory room for maneuvering in order to make country B as stable as possible. Such contagion considerations are likely to affect regulatory harmonization preferences but this is not grasped by the model.

Lastly, the model is clearly inspired by the Basel negotiations and has to be adjusted for other arenas such as the EU. This is something that I will do in the next chapter as two of three in-depth cases refer to EU regulation, which allows to look at the behavior of a central planner. This is not a major shortcoming as the adjustment is easy and there are only few occasions where the negotiation environment is relatively unclear. One such occasion is when the central planners of the EU (I will motivate this in the next chapter) start negotiating with states and it becomes unclear how these cross-level developments would fit into the model world.

Overall, the regulatory corridors-model presents a thorough analysis of the very simple idea that there is a trade-off between harmonizing regulation across countries and accommodating regulation to country circumstances. It also extends this thought by looking at different factors that might influence the regulatory process. By doing this, I show that there is a rationale for both complex, yet unstable, regulations and a relaxation of regulatory coherence over time in non-crisis times. This does not negate potential industry influence on regulation but it shows that even completely well-meaning states would end up with regulation that would seem sub-optimal from a perspective that does not take the benefits from complexity into account. Showing this is the main contribution of my work.

It is important to stress that this model works with sovereign states and international regulation. It is not well-suited for settings with a clear hegemon such as in national contexts. It might have some value for assessing national regulatory decisions in case of competing regulatory agencies or strong other players that influence regulation internally. Yet, this would have to be assessed on an case-by-case basis.

The next chapter will further discuss the merits of the model in the real world and will evaluate the testable propositions 1 and 2 and corollary 1 vis-à-vis cases from Basel negotiations and regulatory harmonization negotiations in the European Union.

IV Empirical evaluation

IV.1 Introduction

The first part of this book sets the stage for a thorough analysis of negotiations of international banking regulation and ends with the question of why complexity occurs in these negotiations. It covers current assessments and criticisms of regulatory outcomes as well as potential explanations for these outcomes. The focus here lies on the much-criticized complexity of international banking regulation and why current explanations for such perceived shortcomings might not suffice to solve the puzzle of why international banking regulation results in such complexity. While regulatory complexity can refer to many different things, I define it as regulatory harmonization attempts that yields different results for similar banks – essentially *regulatory corridors* across jurisdictions or within one jurisdiction. This seems in line with what most critics mean when they refer to complexity as this enables regulatory arbitrage and other evasion behaviors.

This first part also states the research puzzle: Why would states agree on complex rules if they are costly and inefficient?

Lobbying and other industry-influence might be one explanation for that as possibilities to evade rules by exploiting complexity might be a way for banks to mitigate their regulatory burden. However, as I argue in the first part and again in this empirical part, there is no obvious link between lobbying and complexity. Arguments for lobbyists trying to achieve weaker regulation are straightforward, more complex regulation is different, especially as complexity can also be caused by upward deviations from a stringent set of rules (see case II). Thus, either a clear explanation how industry-interests cause complexity is needed or another theory would have to explain these outcomes.

The theoretical model in chapter III provides a systematic economic argument for an explanation for such complexity without relying on international regulatory capture. It shows mathematically that rationally acting states that have diverging preferences could end up with this kind of inefficiencies: Regulation that seems inefficient through complexity might actually be welfare-maximizing for states if we take regulatory flexibility into account. This theory is based on an

array of assumptions and provides propositions for the static and the intertemporal case that are mathematically true. The central claim is that regulatory corridors are a solution mechanism for states and even central planners to resolve disagreements while still achieving some harmonization. This model forms the centerpiece of this book.

In this third section, I will go into the empirics of international banking regulation to check the validity of the mathematical model and its claim of complexity as a solution mechanism. This section also evaluates the central assumption that complexity is positively correlated with costs, especially through financial instability.

This empirical examination of the model and its assumptions is crucial as, while being rigorous in mathematical terms, the model could be criticized as being only a thought-experiment based on anecdotal phenomena. The theoretical, quantitative argument can only make the general point; whether it describes the reality of regulatory behavior is to be seen. Hence, the model essentially is the first, abstract part of the exercise to show that complexity of international banking regulation can be a feature. The empirical examination complements this argument with a peak into reality and how the model help explaining past accords.

My general research approach will be to use separate⁴³ qualitative case studies of regulatory harmonization negotiations in Basel and the EU that yielded complex outcomes. Overall, this section includes three in-depth case studies of operational risk treatment in Basel II, the transposition of Basel III into European law, and the European resolution regime for failing banks. The respective arenas and cases will also be introduced later.

A qualitative analysis is rather unusual following a rigorous economic model but seems most appropriate here. The model makes predictions about mechanisms that take place in negotiations on banking regulation, which only refers to a small number of occasions that one can examine. Case studies that trace the process of such negotiations have the great advantage that they can reveal mechanisms and smoking guns that show how the model fits into describing these mechanisms. Below, I will outline in more detail how this approach relates to previous empirical work.

⁴³ This means that these cases are not directly related and, thus, are not comparative case studies. Each case will have to be evaluated with regard to the model.

This qualitative analysis is based on expert interviews, mostly with regulators, and analyses of negotiation documents. The expert interviews with regulators, supervisors, NGOs, and lobby groups informed the choice of cases and also yielded some results that support the claims of the model. The documents help to build the cases and let us look into the reality of regulatory negotiations. They include position papers, different versions of the respective agreement, proposals, but also interviews, speeches, and testimonials before political bodies. Overall, this analysis is based on over 700 negotiation documents, speeches, or research contributions as well as on interviews with multiple experts at institutions like regulators as well as other stakeholders (a list of institutions can be found in the appendix).

The analysis eventually finds that proposition 1 on states using regulatory corridors as solution mechanisms for diverging preferences can be supported here. Especially the case of operational risk treatment in Basel II (case I, which is focused solely on this question) and the transposition of Basel III into EU law (case II) provide compelling evidence for this claim. Especially the latter also shows some explanatory limitations of the approach such as in cases where complexity in the sense of the model either is a necessary outcome or not possible at all.

Proposition 2 refers to the behavior of a social planner and essentially says that if preferences of states diverge, a social planner would also introduce regulatory corridors even if they yield costs. This would mean that some complexity is actually optimal and not only a second-best outcome. Social planners in the sense of the model do not exist in international banking regulation but some European institutions could be regarded as central planners for the bloc. Especially the European Commission and the European Central Bank have a mandate to care for the stability of the entire EU or the Eurozone. I make use of that and show that these central planners also advocate for regulatory corridors, despite acknowledging potential costs from such moves.

The intertemporal part of the model is carefully examined in case III on the resolution regime for banks in the EU and its overhaul. But I cannot find compelling evidence that would support the central claim that tolerated complexity increases over time as expected costs from complexity might dwindle. This might be because the case that I examine only extends over a couple of years and not decades.

In the following I will first outline previous work that used similar empirical research approaches to solve questions on banking regulation. Second, I will outline my research strategy and my exact

choice of methods. Third, I will translate the model into testable hypotheses and explain the variables of the model in a sense that relates to a qualitative empirical investigation. As a last preparatory step, I will outline the choice of cases and give an introduction on the two arenas analyzed here.

In the actual empirical work, I will first go through the central claim from chapter II that complexity is costly – especially with regard to financial stability as this is the central underlying assumption of the model. Then I will go through the three cases, each of which is meant to focus on one of three hypotheses. Lastly, I will outline the more holistic results from the expert interviews with regard to the three hypotheses and conclude with an overview of the results of this empirical examination.

IV.2 Methodological connection to previous work

This work essentially starts where Singer's (2007) work on the Basel Accords stops and goes into more detail with regard to the features of regulation. Singer shows the power play behind Basel I and how an Anglo-American coalition pushed through its preferences and created an international level-playing field for banks on its terms. The decisive factor here was that interests of the US and the UK were so much aligned that they could form a stable coalition and their combined influence was large enough to push it through. Therefore, the regulatory outcome was more or less aligned with their preferences and not very complex.⁴⁴ If we would stick to this argument for the subsequent reforms of Basel, the path would be relatively clear: some winning coalition would have to favor the agreements that form Basel II, III, and IV (or the finished III depending on whose framing one wants to follow). As shown in the literature review, a number of scholars seem to have found such winning coalitions by including banks and their associations as influential actors that form regulation. This might happen through direct regulatory capture (as described by Lall (2012), for example) or indirectly through a capture of minds (Tsingou, 2015). All this still refers to regulation by design: all features and flaws of regulation have been included following a plan of one group.

⁴⁴ This might also have to do with the absolute level of regulatory burdens imposed by Basel I being relatively low and interconnectedness of international markets being limited at that time but that is not part of the investigation here.

A major critique of contemporary regulation refers to its complexity and that this reduces efficiency of regulation and, thus, financial stability. Following the former arguments, this complexity would be part of a process to achieve exactly that: less stringent rules that benefit the winning coalition at the cost of financial stability. Hence, proposed solutions to the problem of complexity often refer to simply reducing it in order to enhance public welfare by increasing financial stability. This works in a world that resembles that of Basel I examined by Singer – he does not widely extrapolate from his results though. Vested interests, regulatory capture, even corruption might feed into the inefficiently complex regulation that either grants direct exemptions to powerful industry players or enables them to play the system. I subsume these arguments under the concept of regulatory capture, which is the most prominent solution to my research puzzle so far.

While such regulatory capture arguments have their merits and must not be dismissed in many cases, they have one major flaw as they insufficiently consider the changed environment of international regulation. The world of banking regulation is at least bipolar if not multipolar. The European Union and the US are important actors, single European states are more powerful than before. A winning coalition with a coherent agenda seems highly unlikely. Significant regulatory capture of a whole process where different views clash seems unlikely. Complexity is not necessarily a planned outcome to transfer focus from financial stability to helping international finance make profits.

This is the starting point of my research: complexity is a way to reconcile diverging interests of actors to form a winning coalition in a multipolar environment where interests are not aligned. This refers to my definition of complexity from section III.1 that essentially means that rules allow for different treatment of exactly the same portfolio, which is a departure from Singer's world.

The unique feature of the approach in this book is the extensive mathematical model – at least as far as I am aware with regard to IPE examinations of international banking regulation. This model operates on a high level of abstraction (e.g., regulation vectors that represent preferences) and is far beyond the approach of many others in terms of building the framework to analyze in an empirical exercise. This has great advantages as I can clearly identify the assumptions of my model as explanatory variables and see how they influence the dependent variable complexity. The downside is that the analysis is less flexible and less inductive than it would be if my analysis would not be constraint by such a model, its inputs, and its mechanisms. My methodological

approach to make use of the rigor of my model while not being too restrained by it will be outlined in the following section.

The major assumptions of this book differ from what other scholars have done in the past in the sense that they acknowledge the multilateral nature of negotiations and the openness of regulatory outcomes in terms of one more direction, complexity. My work does not necessarily contradict other attempts to explain and examine shortcomings in international banking regulation, especially not regulatory capture theories. It rather extends the scope of this investigation not only by contributing to regulatory theory – where complexity is often covered in a different sense and not so much as the driver for instability⁴⁵ – but also in this empirical chapter as I put an emphasis on the examination of state-behavior while checking for lobbying, which goes a different route than many attempts to reveal industry influence on regulatory outcomes, especially when examining banking regulation.

Thus, this empirical part is to be understood as checking the validity of the argument made before by the model. By building upon expert interviews and document analysis to construct case studies, I evaluate occasions that exhibit complexity to see how much the model fits to explain that complexity. This combination is similar to approaches chosen by Drezner (2007) and Singer (2007). The model in this book is more elaborate than theirs though and, thus, the focus of my investigation is slightly different and directed more toward the theoretical model that should be supported.

The qualitative, case study-based methodology of the empirical part of my dissertation itself is close to former work in the field. It employs similar techniques as many political science studies of the matter including Singer's (2007) approach of evaluating the nature of international financial regulation through qualitative case studies. While Singer looks at different fields of financial regulation and different settings there, I focus exclusively on the field of banking regulation. This enables me to go into more detail with regard to particular aspects of it.

Farrell & Newman (2016) actually make the case for using “case studies, qualitative methods and process tracing as means of understanding institutional stability and change.” They provide an extensive discussion of how qualitative methods can excel in investigating causal relationships in

⁴⁵ This very much depends on the actual definition of complexity. Huber & Shipan (2002) would have a different view on the matter, for example.

international relations based on the complex settings and often times low numbers of cases. Young (2012) uses case studies in his attempt to show whether regulatory capture is an issue in transnational regulation as claimed by many scholars, particularly in Basel II. He criticizes that many attempts to show transnational regulatory capture actually simply claim that if something is beneficial for some actors, they must have had an influence over this rulemaking. In contrast to that, he attempts to first estimate positions of lobbyists and compares them with the actual outcomes of regulation and the process of how regulation was negotiated, which corresponds to the model-based investigation of this book. This analysis is based both on interviews and document analysis – similar to mine.

All these contributions have informed my considerations regarding my methodological approach, which I will outline in the following section. The actual cases and why I deem them appropriate for my investigation are outlined after the methodological explanations.

IV.3 Choice of methods

Qualitative methods, particularly idiographic, diagnostic case studies, seem to be the best way to assess the validity of the model. I will focus on cases from the Basel Committee and the European Union using mostly document analysis and but also expert interviews to investigate how much and under what circumstances the model and its propositions fit into reality. The respective cases should fit to the assumptions presented in the model and, if they happen to confirm the propositions, show mechanics as argued by the model. The qualitative approach enables me to focus on mechanisms as well as non-quantifiable data (such as position papers) and to work with a small N. These are the main reasons why I rely on them and not on quantitative methods. Even if this is a rather unusual approach for economic analysis, qualitative empirical research seems to be the superior choice for assessing the predictions of my quantitative model. A more detailed discussion of the case for qualitative methods can be found in the appendix.

IV.3.1 The relationship between the model and the empirical investigation

In the model, I make rigorous assumptions about some abstract regulatory preferences described by vectors as well as about complexity as the distance between boundaries set by a regulatory regime. This cannot be observed one by one in assessments of reality as it is artificial with abstraction being a standard way to make reality accessible for mathematical modelling. In the

quantitative model, this allows for comparability of actors, starting points and outcomes. This is aligned with the key feature of Gerring's (2017) distinction between qualitative and quantitative methods: he defines "quantitative observations as comparable [...] and qualitative observations as non-comparable" (p.2). The model does not cover observations in Gerring's sense but makes a rigorous argument resulting in propositions that can be translated into hypotheses for an empirical examination, which then has to rely on observations.

In this sense, this dissertation employs a multi-method approach. The theoretical part of my research is not only something derived from earlier research or anecdotal evidence but a thorough quantitative model that might be generally applicable. The empirical examination of the developed hypotheses is then qualitative and tries to examine how much the model can explain actual real-world outcomes. To stick to one of Gerring's pictures, the model draws a map and the empirical research sees whether it fits to the actual landscape.

I do that by using case studies based on tracing the process of international negotiations by examining documents related to it and conducting interviews with experts. "[C]ase-level analysis is more plausible if the cases of theoretical interest are heterogenous and scarce [...]" (Gerring, 2017, p. 21), which applies to my field of interest. My model describes international banking regulation accords or individual components of such multi-national regulatory agreements. While there are plenty of different cases of individual rules that one might examine, there are only a few dozen states with significant influence over international regulation and, more importantly, only two arenas that produce such accords: Basel and Brussels.⁴⁶ This means that the actual room for investigation is relatively small in terms of observations.

As I will further explain later, these two arenas are rather heterogenous and enable me to examine different aspects of my theory. This means that potentially comparable – in a narrow sense – observations can only be made within these arenas. Yet, also these arenas have changed over time, the EU has evolved, the Basel committee did so too, which makes it even more difficult to compare separate cases.

⁴⁶ There are other bi- and multilateral agreements on banking, of course, but Basel and Brussels produce a significant amount of such rules and appear to be most prominent.

IV.4 Research strategy in the case studies

IV.4.1 General strategy

The primary purpose of the case studies is to see how whether the model can offer a theory for real developments in international and European banking regulation. As discussed when assessing potential explanations for complex international agreements in chapter II, there is no specific explanation for complexity in international banking regulation so far. Regulatory capture and other theories that broadly refer to lobbying can explain weaker regulation but not necessarily complex ones. Especially not on the international level as this would require, roughly speaking, a coalition of lobbyist to increase complexity, which is logically dubious as explained in chapter II. One could make the case for regulatory capture when rules are adjusted downwards (and this case is made extensively) but extrapolating this to when the regulatory corridor is widened and various rules apply across jurisdictions is far-fetched. The latter yields a similar result as the former through the vehicle of complexity but this vehicle makes a difference.

The model offers a theory to explain complexity through regulatory corridors and this is the main contribution of my work. As this model provides a new explanation, it requires some empirical underpinning. The formerly motivated case study-approach will serve as check on how valid the theory is by checking the hypotheses derived from the model. The purpose of the cases is twofold.

First, they generally serve as plausibility probes⁴⁷ for the model, which were described by Drezner (2010) as ‘dipping the first toe in the water.’ The three main cases on banking regulation evaluated here start with an examination whether the model might have power to explain them. This means that the basic setting of all cases would be to evaluate the general setting, whether diverging preferences of states exist, and whether the final regulation consists of a regulatory corridor, which can be regarded as complex in the sense of the model. Depending on the purpose of the respective case, other features have to be present: a central planner that corresponds with proposition 2 of the model (cases II and III) and intertemporal change of rules, referring to corollary 1 (case III). Only if these criteria are fulfilled, I pursue them further as this makes them (most) likely cases to see the mechanisms of the model.

⁴⁷ Referred to as the ‘equivalent of an “existence proof” in mathematics’ by Levy (2008, p. 7).

Second, the deeper purpose of these cases then is to test the hypotheses stated in section IV.5 derived from the model. These hypotheses refer to processes rather than clear-cut outcomes. The cases serve as checks whether the theory as expressed by the hypotheses has explanatory power in past cases of banking regulation negotiations that fit into the framework examined by the model. As Levy (2008, p. 4) describes it, such theory-guided idiographic case studies “are explicitly structured by a well-developed conceptual framework that focuses attention on some theoretically specified aspects of reality and neglects others.” The model is this specified framework.

In one case, I find smoking guns that confirm the theory (case I on operational risk treatment in Basel II). Other cases enable to dive into the negotiation process of regulation and the behavior of different actors there that can be evaluated with regard to the theory. To do this thoroughly, I will also look at the most-developed alternative explanation for complexity wherever feasible. This alternative explanation is some international lobbying that results in such complexity. As discussed earlier, this might especially be important when parts of regulation are simply weakened in negotiations as there is not theory or argument that would link larger regulatory corridors to international lobbying.⁴⁸

Essentially, each case study is a mix of plausibility-probe and theory-driven idiographic analysis of one historical accord that extracts the mechanisms in question. “Plausibility probes are particularly useful in combination with formal models [...] but they can also be used to set up more intensive case studies” (Levy, 2008, p. 7). I do both here and use them to add validity to the model.

IV.4.2 Specific approach towards cases

Gerring & Cojocar (2016) present a wide range of ways of how cases can be used depending on the desired purpose of the respective case studies. This ranges from descriptive case studies over exploratory ones that are meant to identify hypotheses and estimating cases that are meant to estimate a hypothesis up to diagnostic ones that assess (or investigate) a hypothesis. The last category fits best into the purpose of this empirical chapter as the quantitative model provides

⁴⁸ As opposed to national lobbying that might increase the divide between states (or could close it if regulatory preferences of banks are aligned). The important point is that lobbying and regulatory capture also have to be viewed on different levels and are likely to also face different interests or preferences.

the hypotheses that are supposed to be assessed. Two sub-categories seem to fit best: the diagnostic influential and the pathway case study. The diagnostic influential case study examines what had the greatest impact on the respective hypothesis while the pathway analysis looks at how the independent variables have an impact on the dependent variable while background variables remain constant or biased against the hypothesis. In some cases, most similar case studies might be possible that simply show similar background factors and examine the relationship between dependent and independent variable based on this.⁴⁹

It will depend on the available data in each case to determine which way can be followed and I will motivate the respective approach on a case-by-case basis. Cases that can be reconstructed through position papers, speeches, or interviews could work well as influential case studies. Pathway case studies are more likely to work with more reliance on documents from the negotiation process as observations. This might include speeches and public interviews but mostly preliminary agreements or legal proposals. Most similar case studies would require finding cases that are very similar in their basic setting but show differences in the independent variables. It showed that the most promising strategy for the cases here usually was a mix of all these types of case studies, especially the first two, as there was sometimes evidence for influential factors followed by a pathway traced through negotiation documents and vice versa. This methodological foundation will, thus, be adjusted to the available data.

I chose to conduct three distinct case studies for two main reasons: First, not every case shows all properties that are part of the model. Some are also likely to show one specific aspect – particularly the fundamental claim that complexity is a solution mechanism – while others are broader. Each case will examine one additional hypothesis such that the first hypothesis is examined three times, the third one once. Second, it increases credibility of my research if one can see the mechanisms in multiple occasions, especially the fundamental claims.

IV.4.3 Interview strategy

I conducted interviews with representatives of potential actors in the process of international banking regulation including NGOs, lobbyists, national central banks, European bodies, and national political actors such as ministries. The interviews were semi-structured research interviews as described by Leech (2002) as “[...] often used in elite interviewing [...]” Leech also

⁴⁹ Even though I tried this to some extent in case III, this did not work out.

inspired the general way of asking questions in the open part of my questionnaire. These questions often left much room for my interview partners to develop their arguments and to come up with their own ideas. Such questions asked them to describe their preferred regulatory framework if they could act as a social planner or to walk me through the negotiation process with focus on where compromises are made. The structured parts enable me to compare clear answers of different interview partners. However, everyone had much to say with regard to the structured questions and oftentimes answers were qualified so much that it makes little sense to force that into a simple yes/no-scheme. I will accommodate to that in my analysis. Most interview partners allowed me to record conversations giving me the opportunity to dive deep into what they said even months after the interview. Nobody allowed me to publish them, which is very understandable given the secretive nature of the subject.

A full list of institutions I interviewed can be found in the appendix. This set of interview partners is heavily skewed toward the European cases for practical reasons but most interviewees were familiar or even part of negotiations in Basel as there is overlap. Hence, these interviews gave me valuable insights into both arenas. They also inform my document analysis and the cases that I chose.

As interviews were conducted with partners that had all different special fields of interest and different degrees of generality of their work, my research will get more document based as it becomes more specific. An NGO representative often rather looks at the greater picture while representatives of supervisors are very much concerned with the regulations they have been working on. Relating specific cases to more general developments works but the other way around is problematic. Only because some interviewee describes something as a general problem does not mean that it is a problem in a specific case. Accounting for that will be crucial in the analysis.

However, everyone had opinions on and experiences with the mechanisms described in my model. This helps checking my assumptions and predictions on a relatively general level but also when it comes to specific cases that only a subset of interviewees was familiar with. Sometimes they brought them up themselves, sometimes I specifically asked for their opinion on certain regulations. The fewer interview partners could cover a certain topic the more important will be document analysis as a supplement to what they said. This will all be done using Gerring's (2017) guidelines with respect to critically examining cases with external factors either being unrelated

to the dependent variable or even biased against it. Thus, it makes most sense to use interviews on the more general level when assessing the nature of negotiations.

I will refer to interview partners by using pseudonyms to protect their anonymity. It will be specified if the person I was talking to represented a regulator (this includes supervisors that are involved in the regulatory process) or another organization such as NGOs, lobby groups, or think tanks. The latter three will be subsumed under 'others' as they would be easily identifiable if I would break down their role. Some interview partners allowed me to record and transcribe our conversations, which explains why I can make more detailed use of their contributions and can even spot nuances in their answers. For the others, I rely on my notes.

After clarifying the general empirical approach of this research, I will go through the actual claims that are supposed to be evaluated in the cases.

IV.5 Variables and hypotheses

The dependent variable Y in my investigation will be complexity as defined in section III.1 – referring to the boundaries of the regulatory set created by it or, more simply, as regulatory corridors. The size of the regulatory corridor (Y) is supposed to be explained by variables such as preferences of states (based on proposition 1 from the model). The model shows mathematically that there is a straightforward link between diverging preferences of states and the regulatory corridors-outcome Y . The assumptions of the model would include how different the starting positions of negotiating states are (also explanatory variable X) and – as a binary and somehow underlying variable – whether complex solutions are possible at all (which will become important in parts of case II). The external factors Z include alternative factors that can have an effect on Y such as international lobbying. Essentially, these factors would include alternative explanations for complexity or ambiguity in international regulation. The purpose of each case study would be to identify these factors as well as explanatory factors that are included in the model and to see whether and how they influence the dependent variable Y . As long as such alternatives exist and are testable, this will be done.

IV.5.1 Complexity as the dependent variable

The dependent variable Y in these examinations is what I call complexity. As outlined in section III.1, this refers to a set of rules that allow for multiple outcomes defined by the upper and lower bound on a continuous scale mapping these rules. The further away these boundaries are from each other, the more complex is the regulation. This construct entails ex ante exemptions from rules that are already part of the harmonization agreement as well as opportunity for discretion that enters later by states implementing the rules differently. This definition of complexity is an abstract auxiliary structure as complexity itself can be perceived in many different ways. I always mean this abstract definition when mentioning complexity if not stated otherwise.

Yet, it requires a bit more elaboration to transfer this abstract definition into something accessible for empirical research. This can only be done on a case-by-case basis and I will have to argue in each case how the regulation in question relates to my abstract definition of complexity. This variable can either be binary – if I can only assess whether there is complexity in the sense of my definition – or continuous if I can actually assess the discretion allowed due to complexity (this is only possible to some extent as complexity in my sense remains abstract at all times).

As a preliminary empirical exercise, I will assess how practitioners refer to complexity and how this fits my definition. This is particularly important as many stakeholders would not agree that complexity per se is harmful for stability but only a certain type of complexity. Furthermore, I will discuss the empirical link between complexity and financial stability in a first step toward the empirical analysis. By doing this, I will set the stage for the remainder of the analysis by translating the abstract concept of complexity into practical terms. This enables me to assess complexity as a dependent variable in each case.

IV.5.2 Explanatory variables of the model

If a case shows such complexity, I will try to trace the process of how regulators got there, which would be based on the explanatory variables. There must be some trigger that resulted in complexity as they would have agreed on a less complex framework otherwise (such as the process that Singer (2007) showed for Basel I). The model stays in Singer's state-centric world but makes it multipolar such that no coalition can push through their preferences but a solution mechanism is needed to reconcile preferences of the poles. This would be the trigger that my

model suggests. I will estimate preferences similar to the interview-based approach by Howarth & Quaglia (2016a) on preferences on Basel III regulations in Europe.

Technically speaking, the independent, explanatory variables are those that are the explanatory factors of the model influencing complexity. All direct or indirect internal factors of the model fall into this category: First, the negotiation power of participating countries – essentially, whether the world is unipolar, has one winning coalition, or is bi- or multipolar (the model implicitly assumes bi- or multipolarity). Second, *diverging* preferences of negotiating countries with regard to the regulation in question. Third, the institutional setting such as what overarching body is involved (such as the ECB or the European Commission). Fourth, that regulation is binding and states actually have an interest in engaging in regulation negotiations with increasing costs the less harmonized regulation gets. Fifth, that states are the dominant actors (also an implicit assumption). Sixth, expectations on financial instability due to complexity deteriorate over time after a crisis event. These factors would explain complexity following my model. It is part of the investigation to extract these factors during my case studies and to show how they result in complex regulation or not. These explanatory factors are operationalized as follows to check whether they apply:

- a. Complexity in the sense of the model results in increased expected costs for states (e.g., through less financial stability).
- b. States have diverging preferences with regard to banking regulation (i.e., the level of regulation that is welfare-maximizing for them).
 - i. There is no winning coalition (consisting of one or more members) that could impose its own preferences on the others.
 - ii. International social planners would take the preferences of all relevant states into account.
 - iii. International regulation has an impact on domestic regulatory decisions.
- c. States are the dominant actors in international regulatory negotiations.
- d. (Expectations about costs from complexity deteriorate over time after a crisis event) (Corollary 1)

These assumptions (except for d. as this is a special operator that will require more elaboration in the third case) will be evaluated in each case before the actual investigation on how they might have contributed to a complex regulatory outcome.

IV.5.3 Hypotheses

The following hypotheses are based on the results of the model and connect the explanatory factors (X) from before with the outcome of interest (Y). They will be tested in different intensities across all cases covered in the course of this analysis.

H1: Complexity is welfare-enhancing for individual states (Proposition 1).

H2: Entities that act as social planners will also introduce complexity to maximize welfare (Proposition 2).

H3: States' welfare-maximizing complexity increases over time after a crisis event (Proposition 3, Corollary 1).

With a. and b. as necessary and c. as sufficient conditions for the respective hypotheses H1 and H2 (b.ii. being applicable to H2). The variable d. only applies to preference formation in the intertemporal case and would be a necessary condition for H3. My model predicts that if only states and their international social planners would regulate, we would still see complexity. The relationship between explanatory variables and hypotheses remains important. A world where every hypothesis holds true but assumption c. does not would render my model useless in that case.

H3 attempts to translate a process into a testable hypothesis. The respective evaluation will then have to cover the basic variables of the model (preferences, complex outcomes, expected costs of complexity) as well as changes over time within these variables. The theory would predict that over time – and without a crisis event – expected costs of complexity deteriorate, which increases complexity by giving more weight to the benefits of following individual preferences.

By assessing dependent and independent variables in different settings, I check the validity of my theoretical considerations. I will examine both assumptions and outcomes in every case such that each case represents a holistic assessment of the real-world situation.⁵⁰ Some cases also might help to go beyond the model as they might reveal other mechanisms not grasped by the model. I will outline my case selection later.

⁵⁰ Variable a. is an exception as this is more of a meta-question that requires clarification in advance.

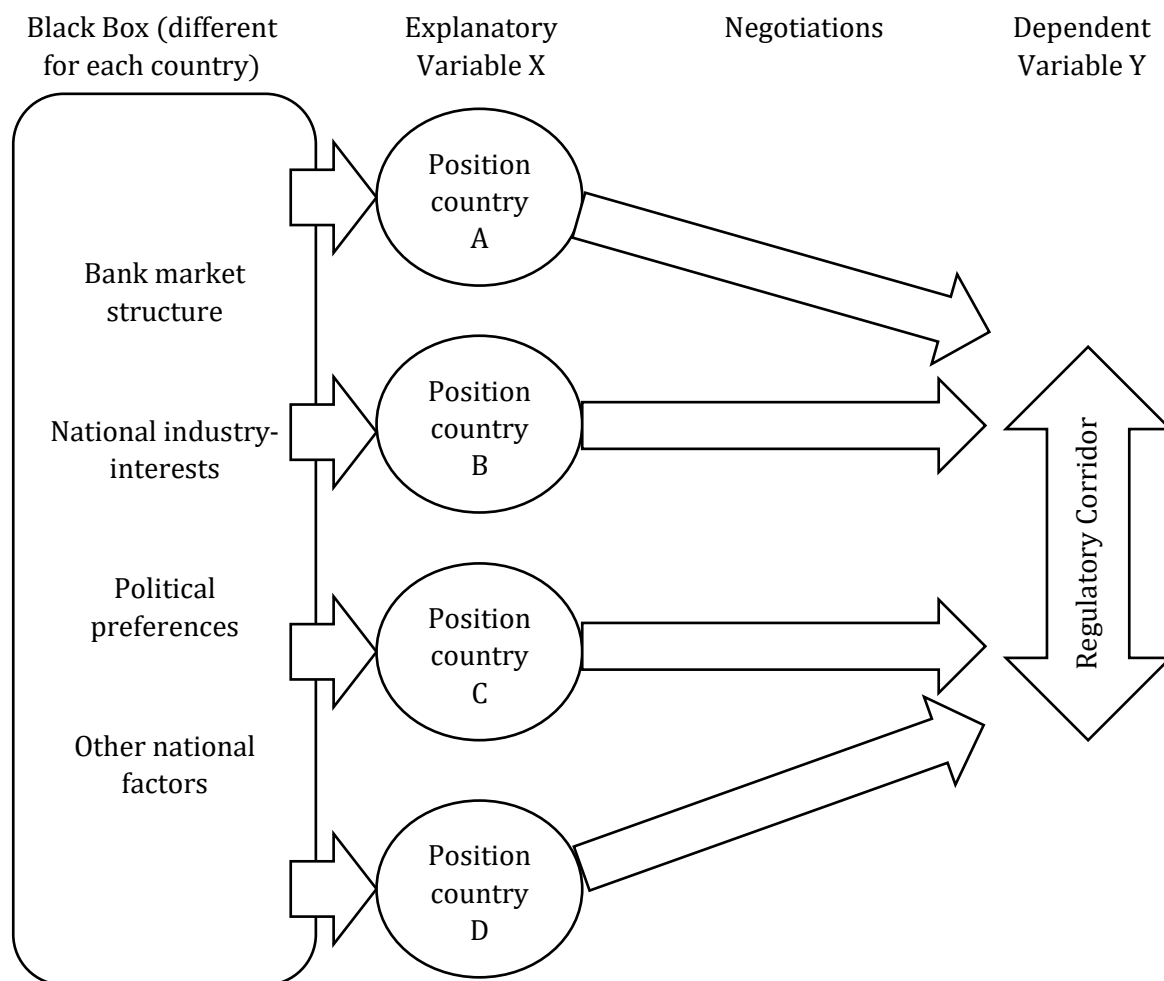


Figure 7: Depiction of the process described by the model. Countries A and D have the most extreme positions determined in some domestic process. Their clash is resolved through an agreement that narrows the regulatory corridor compared to what they would do unilaterally but still leaves room for discretion compared to a coherent regulation (not depicted).

IV.5.4 Counterfactual

The alternative to the model explanation would be the industry-centric approach as, for example, suggested by Lall (2012) or Tsingou (2015) where international lobbyists have great influence on negotiations. Departing from their research, one could make the case that the industry actually causes sub-optimal regulatory outcomes, meaning that the regulation is more complex (and thus costly) than necessary given the preferences of states. Remember that the model suggests that regulatory corridors are actually welfare-enhancing depending on states' preferences. An industry-led emergence of complexity, in turn, should be based on industry preferences or somehow related to them.

Thus, the big counterfactual to the hypotheses and propositions is that complexity is the result of regulatory capture of the respective international process. This means that the rules are influenced by lobby groups at the actual international negotiation stage in Basel and Brussels or enough countries are captured to form a winning coalition that serves the will of these industry groups. It will be crucial to identify the explanatory factors and their relationship to alternative factors as my research operates on two levels: preference formation on the national level and decision-making on the international level. This means that influential factors have to be deconstructed into what influences X and what is an external factor Z that directly influences Y. For example, industry influence can either happen on the national level and would then simply form X and is not subject of my investigation. Or it can happen on the international stage and would constitute clear regulatory capture – if, for example, the Institute for International Finance would influence decision-making in Basel. The latter would be a clear factor Z that could influence X and/or Y.

It is in the nature of most of these external factors that they are hard to detect – few lobbyists would want us to know whether they influenced some decisions – but it should be possible to estimate the influence of these background factors based on both interviews and documents that are published by international industry groups when they try to influence regulatory processes similar to an approach employed by Young (2012). Of course, this only works if there are credible candidates for influential international lobby groups.

By carefully unpacking the cases with regard to the variables X, Y, and (where applicable) Z, I can triangulate the actual regulatory process based on the map drawn by the model and check whether this map gives an accurate description of what is happening on the ground.

However, as discussed above in section II.3.2, this counterfactual rather applies to occasions where rules were clearly weakened (e.g., in case I) not so much when complexity in general increased. The latter case might result in weaker regulation but through the vehicle of a regulatory corridor. If there is no indication that such a corridor was the goal of international lobbying activity, it is both difficult and partially superfluous to examine potential regulatory captures on the international level. As discussed before, this does not apply to national influence over the position of national regulators that then enter regulatory harmonization negotiations. This difference is depicted in Figures 7, 8, and 9.

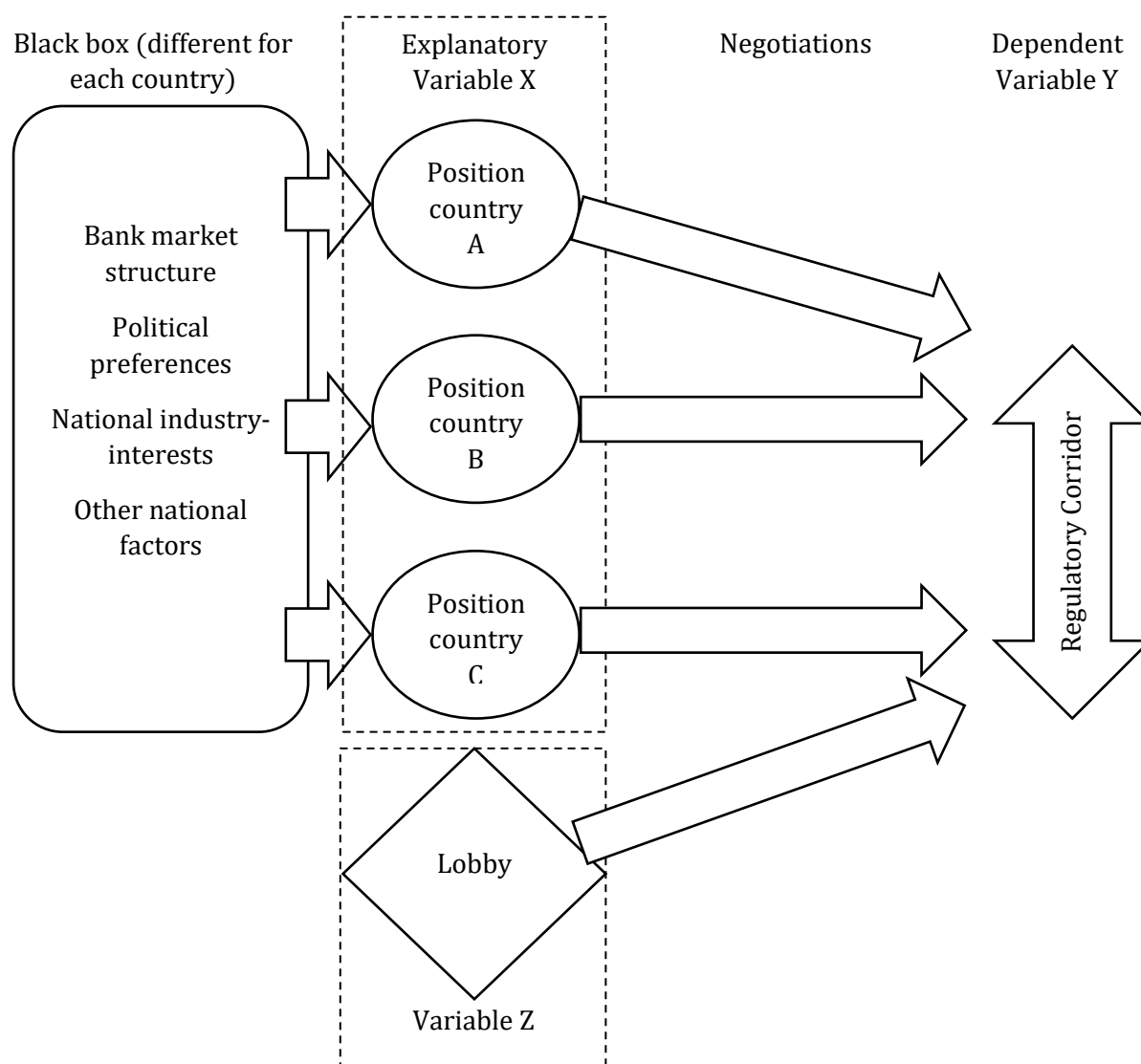


Figure 8: First alternative explanation: An international lobbyist joins the negotiations and extends the set of positions that have to be reconciled in the negotiations. The result is again a regulatory set but it is larger than anything that countries A, B, and C would agree on.

To make this point clearer, look at case II, which is about regulatory decisions related to the implementation of Basel III in Europe. Many of these decisions (that are examined here) rather concerned discretion for regulators to increase regulatory burdens unilaterally or to deviate up- or downwards from harmonized approaches in a national context. This mainly refers to discretion for regulators and supervisors to interpret rules. The resulting differences in regulation, the regulatory corridors, can easily result in regulatory arbitrage and other problems related to complexity but they are not directly based on a weaker regulation but on complexity in the regulatory

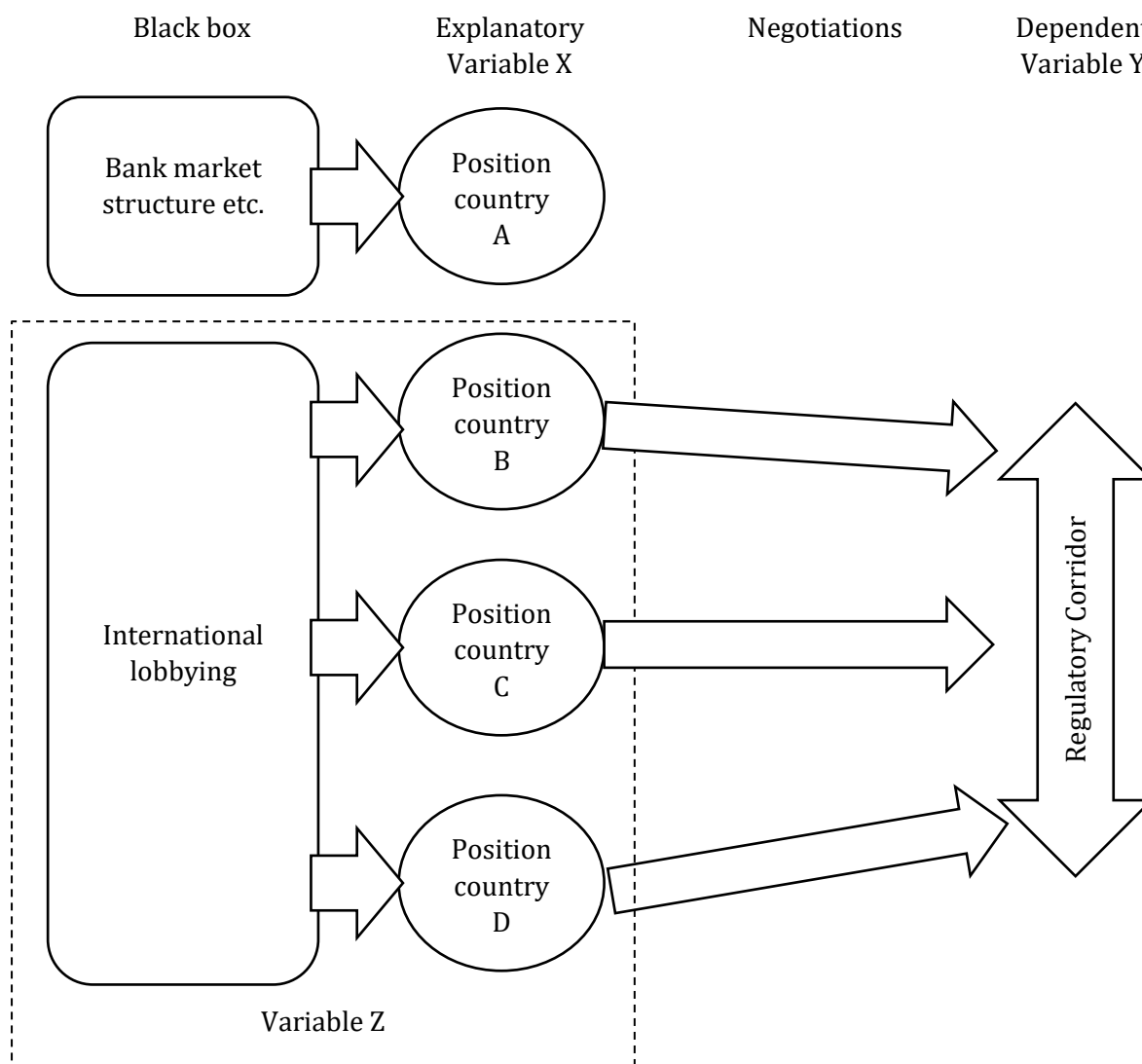


Figure 9: Second alternative explanation: International lobbyists are so successful in their lobbying efforts that they capture the international negotiations by convincing a winning coalition to implement their preferences as a regulatory set. This certainly is an extreme depiction of this case.

framework that banks can exploit (costs can even just come from banks having to adjust to multiple regulatory regimes). The regulatory complexity applies foremost to regulators and their interplay *can* have negative implications through regulatory arbitrage and other issues – particularly when aggregated. But the very point of my model and the argument so far is that these costs only occur as expected costs. There is no theory or evidence I would be aware of that lobbyists would unify to increase such *expected* arbitrage opportunities, partially based on stricter rules. This can still be the case but is so remote that there has to be indication that such complexity might have been the result of lobby influence in the process of regulatory harmonization.

This evaluation of the process with focus on the assumptions and predictions of the model is exactly the point of my empirical exercise: it is supposed to check how the model, which makes predictions both on the macro (meaning whole accords) as well as on the micro-level, performs in explaining real developments compared to the alternative explanation.

Based on the consideration from this section, I will select my cases as outlined below.

IV.6 Case selection and data selection

The purpose of the case studies is to check the applicability of the model, especially its assumptions and mechanisms, to real regulatory outcomes in the field of international banking regulation.

Most authors that criticize complexity and the resulting opportunities for evasion look at whole frameworks such as the Basel III accord to support their claims and I build on these criticisms. My approach is more granular, though, as I go into specific cases in which I can estimate positions of stakeholders and make sense of the negotiation process. These single bits and pieces are the parts that make up the bigger accord and can, thus, contribute to understanding the bigger picture. Particularly, I attempt to identify and evaluate the issue of complexity in terms of my definition for certain arrangements, which stands in contrast to proxies such as overall number of pages (Haldane & Madouros, 2012) or some more sophisticated algorithmic methods to estimate complexity (Colliard & Georg, 2020). These alternatives also refer to the bigger, overall picture while I dive deeper into the actual regulatory matter and evaluate how a certain regulation allows for discretionary behavior of banks or their supervisors.

This granular approach can be achieved in two ways: First, one can choose a relative narrow topic where one can estimate positions of actors and trace their influence on the outcome. Second, one can choose a broader topic and pick out single aspects. Both will not give a holistic picture of the whole process but enable a detailed evaluation of important parts. I will employ both approaches. In each case, I will explain the general setting and whether and how complexity is an issue and how it is potentially costly. This means that I evaluate how the boundaries of regulation were stretched compared to a non-complex or less complex regulation (usually initial proposals). Of course, this more nuanced measure of complexity requires some more underpinning than simpler ones such as number of pages.

Cases will be selected on basis of suitability, accessibility of documents and other data, and whether practitioners referred to them in interviews or informal meetings. In the following, I will outline the selection criteria for cases in more detail. Later on, I will outline the respective arenas and the cases themselves.

Most important, cases have to come from international banking regulation or must have their origins in international regulatory accords. Cases of unilateral rule-making that potentially leads to reduced financial stability do not fit into the world of my model and cannot contribute to its validation or falsification.

Cases must exhibit complexity of the regulatory framework as defined in section III.1. A basic assumption of my investigation is that complexity is increasingly costly especially through more financial instability. While this assumption is debatable (see next section), its investigation actually requires cases to show complexity once it is accepted. Just having stricter or more lenient rules is nothing that can be explained by my model; my model only adds explanatory power for financial instability if that is related to increased complexity. The key question is whether a rule is applied coherently across jurisdictions or if there is divergence that would result in complexity that enables regulatory arbitrage and other issues criticized by critics of complex regulation. This also includes regulation that already leaves room for maneuvering for banks if it is implemented consistently over jurisdictions – which I call *ex ante* complexity.

It is important to stress how complexity is defined here as it might be tempting to see increased complexity everywhere and to attribute everything that might reduce stability to complexity. If a rule is simply more lenient overall (and thus likely to reduce stability), I have no explanation for that. If a common rule is relaxed and some countries choose to stick to the stricter rule while others go for the more lenient one, my model provides some explanation for that – i.e., why some countries might not go for this relaxation even if that means reduced consistency of the whole accord. In my argument, this is essentially broken down to the respective country making a different assessment of which regulatory regime would benefit it most. This is different from models that simply argue that countries follow their self-interest in the international sphere and will deviate in any case in the sense that diverging from a consensus comes at a cost – financial instability through regulatory arbitrage and evasion behavior. This argument still essentially refers to states acting out of self-interest but with another layer in between.

To put this into a more practical context, a rule that is made more lenient (e.g., a relaxation of standard capital requirements from 8% to 6%) and still applied consistently across jurisdictions does not fall under the umbrella of my investigation and I might have to dismiss some cases that eventually just exhibit such patterns. In contrast, if the rule results in 8% capital requirements being applied to one bank and 6% to others even though they only differ in terms of their jurisdiction, this would be complexity. The key question is whether a rule increases the international regulatory set for banks either in general, meaning that there is more choice in the framework, or across countries, meaning that rules are implemented differently, which can cause regulatory arbitrage. Estimating the boundaries of such a set would then be a proxy for measuring the degree of complexity. I will do this in an abstract way and rather show that there is room for maneuvering for banks and states under certain provisions of accords.⁵¹ A prominent and widely used example for such outcomes might be internal ratings-based risk modelling under Basel II and III where banks can calculate their own regulatory capital and their actual capital requirements depend on their creativity and the guidelines of their domestic supervisor.

Furthermore, cases should exhibit variance in preferences and regulatory outcomes across states and for longitudinal cases also variation in rules over time. Each case should also be approachable from multiple angles. One interview is not enough to cover one case thoroughly and documents from only one source, say a supervisor that summarizes positions, will not suffice to get a credible picture of the case. The best case would be that I could get multiple points of view from different stakeholder groups including lobbyists and NGOs across different jurisdictions including the ‘facilitator’ – such as the BIS or the European Commission or other multilateral institutions.

IV.7 Arenas

IV.7.1 Basel

As briefly explained before, I will separate my analysis into two broader cases: the international Basel framework and the European banking regulation framework negotiated in the European

⁵¹ The actual boundaries are usually discovered in the market process when regulators and banks struggle about what is allowed and what is not. Before agreeing on international accords, domestic regulators try to estimate the effects of regulations but cannot do that with certainty as the Comptroller of the Currency argued in a testimony before the US House of Representatives (Hawke, 2003a). The key aspect of my investigation is that the sheer existence of complexity opens avenues for evasion behavior without us knowing where it might appear. Not every complex regulation will lead to instability, but complexity increases statistical instability as argued based on work by others before. This means that pinning down complexity in a non-abstract and measurable way might only be possible in particular circumstances. Section IV.9 briefly shows this and the relationship between complexity and instability.

Union. First, Basel comes closest to my model world without a social planner. The Bank for International Settlements (BIS) acts as some kind of facilitator of negotiations but negotiations in the Basel Committee on Banking Supervision (BCBS) are dominated by representatives from countries that control international banking markets. The outcomes from Basel are not directly binding and the BCBS cannot enforce compliance, opening the avenue of ex post deviations from the accord.

Still, Basel sets the stage for much of national regulatory behavior, making it the sandbox for international regulation. Regulator#31_2020 even saw problems for democratic legitimacy here as the opaque BCBS heavily influenced decision-making on the European stage. Path dependencies and some industry influence probably exist but nation states seem to be the dominant actors at all stages (Interview_Regulator#31_2020).

The BCBS was set up in 1974 in the aftermath of turmoil on financial markets. After the capital controls of the Bretton Woods era were abolished, sudden financial instability made clear that banking supervision and regulation had to be increased and harmonized to prevent such troubles. The framework has evolved over time, more countries became important (back then, the US still was the uncontested center of the Western economic order followed by the UK and Japan) and the agreements got ever more detailed – and complex. The development of the Basel Accords on Banking Supervision is summarized in Table 3.

Relevant actors here are – as usual in international negotiations – states or their representatives but also industry groups, NGOs, the BIS itself, and other organizations. Even though the BIS is often referred to as a club of central banks, which are more or less independent from governments in most countries, the BCBS is not and supervisors that are directly mandated by governments negotiate there. Formally, only these states have power there. Soft power in Basel decision-making might come from lobby organizations, most notably the Institute for International Finance (IIF), which represents large, international banks but also other international associations (as argued by Tsingou (2015), for example). Of course, domestic players might have influence as well but I subsume this under the respective country preferences as long as they target domestic policymakers that then represent the country in Basel. Still, it might be possible that lobbyists directly influence Basel agreements. Almost all interview partners denied that this is the case as will be discussed later. The same applies to NGOs. Lastly,

the BIS acts as a facilitator that also publishes its own assessments of questions of financial stability, which often set the agenda, and is likely to have soft influence.

One factor that might disturb the results with regard to states exerting power play in Basel is the European Union, which is home to a number of important players in Basel and itself an observer at the Committee. According to some interviewees, EU members of the BCBS agree on a negotiation strategy before the meetings (e.g., Interview_Others#13_2019).

The analysis with respect to Basel rules will be mostly conducted through document analysis as the BIS publishes much of its negotiation outcomes while its decision-making often is secretive and not readily accessible for research.⁵² I will still use results from interviews but documents will be my main source of data. These include the accords and their extensions as well as previous versions of these documents to compare the developments over time. I will also incorporate publicly available positions of negotiating bodies such as central bankers' or politicians' speeches or position papers published by member countries. This is mainly to show the different preferences of states but also to find crucial points of disagreement where my model could have explanatory power. Lastly, I will also refer to position papers and publications by the BIS, lobbyists, and NGOs.

IV.7.2 European Union

Second, I will focus on the European Union, which is an important player in international banking regulation by itself but also an arena where its member states agree on regulation among them; it is somewhere between the nation state and a truly international arena. The European project shifted from a rather loose economic community toward the union between 1992 and 1999, which also included the transition to the Euro as a common currency with a common monetary policy and mostly open capital markets. Later, essentially through the Treaty of Lisbon in 2009, the EU became ever more integrated with more powers for the European Parliament as a legislative body and generally more centralization in rulemaking. The Parliament has no right to propose new rules by itself but votes upon proposals and can adjust them in the Trilogue, which

⁵² Some like LeBor (2013) attempted to dig deeper on the history of the BIS in general, but such efforts are not necessary for this research as many regulators express opinions about their view on international regulation, which can serve as a proxy for their positions in the negotiations.

will be introduced later. The Parliament is responsible for the entire EU but consists of politicians that represent their constituents at home. Hence, it is a central actor but also a political arena.

Probably more important than the Parliament is the Council of the European Union where governments of member states are represented and make decisions. EU rules have to pass this legislative body and are adjusted by states in the process. The Council is not a central planner as governments there represent their own interests and negotiate among each other and with the other European actors. This Council itself might come closest to the Basel Committee on Banking Supervision, which also consists of states representing their interests.

Lastly, there is the European Commission, which is the head executive agency of the EU and comes closest to a central planner among those three. The Commission still is a political body, its commissioners are political appointees and states try to influence decision-making in the Commission just like lobby organizations. Yet, its mission is policymaking for the EU as a whole and while it might not be the perfect, independent social planner in line with economic theory, it comes very close to a central planner that takes the preferences of the entire group of actors into account.⁵³

The Commission is also the body that usually proposes Regulations and Directives that then go through the legislative process in the Parliament and the Council. Regulations then become directly applicable to states – rules are harmonized for all countries. Directives have to be translated into national law, which allows some diverging implementations. Another tool of the Commission is the Delegated Act, which means that the Commission is empowered in a regulation to decide upon some matters by itself as long as the other legislative actors do not object. In weaker versions, such executive power can also be bestowed on other agencies that then determine technical standards or other details.

The legislative process essentially starts with a proposal by the, which is then commented by the other two legislative bodies: the Parliament and the Council. Eventually, all three must agree –

⁵³ The role of the Commission as well as other actors might be contested here. For example, its politicization has increased in some areas in the past years (Nugent & Rhinard, 2019) and the de facto independence of other European agencies from the Commission or other actors can be questionable (Busuioc, 2009). However, the key assumption for treating the European actors as central planners is that they would take the welfare of their entire constituency into account. This seems to be not too far-fetched. Their positions might not be fully aligned with that of a *social* planner as they will be exposed to lobbying both by states and the interest groups but they can most likely be regarded as *central* planners. This is as much of an approximation as one might get to a hypothetical social planner in multinational decision-making.

most importantly, member states within the Council – to turn such a proposal into law. The process where all three bodies negotiate is called the Trilogue.⁵⁴

The EU also has a number of its own executive agencies (including the Commission) that are not only facilitators like the BIS but member states actually transferred discretionary power to them. With respect to actors in banking regulation and mostly supervision, the most important actors are the European Banking Authority (EBA) and the European Central Bank (ECB) as well as agencies close to these bodies such as the European Systemic Risk Board or the Single Resolution Board. Especially the ECB is an important and probably the most independent player in banking regulation in Europe. While it is rather a supervisor for banks of significant systemic importance by law, it also gives opinions to the legislative procedure in Brussels. They are important as one could see the ECB as coming as close to an independent social planner as it gets in the reality of multilateral regulatory harmonization. Its proposals do not become law but its criticisms regarding Commission proposals can show how such a mostly independent actor would plan.⁵⁵ The EBA is often empowered to set technical standards or adjust regulatory details to new circumstances. Whenever these two or the other European agencies become important, they will be introduced during the case.

Furthermore, there are of course also other actors involved such as lobbyists and NGOs. The EU even funds NGOs such as Finance Watch itself.

Lastly, the national competent authorities for supervision and regulation still play an important role. Most banks are still supervised by them and they are also involved in technical decision-making. However, the important point here is that, in contrast to the Basel regime, there is an integrated structure that makes the EU a powerful player itself. Yet, it is still heavily influenced by member states as dominant players. This is in contrast to true nation states like the US where federal states are less powerful in terms of shaping common regulation.

European agencies are particularly transparent and publish plenty of documents, including on consultations and how versions of the same regulation or directive evolved. European agencies

⁵⁴ There are different versions and different legislative procedures but it essentially comes down to negotiations between these three (or maybe single member states, which is subsume under Council negotiations) and the general reference to that as the trilogue suffices for the purpose of this investigation.

⁵⁵ Clearly, the banking supervision division of the ECB is not as independent as the monetary policy arm. But it is much less political than, for example, the Commission.

are also very open to interviews, which is why I base this part more on interviews but also on a wide array of documents.

The setting of the arenas I am analyzing will be explained in more detail in the respective section and depending on how important it is for my cases. I will start with Basel as this is the arena where regulation is developed and agreed upon. Then I will move to the European level, which is more complex in terms of institutional settings and also in terms of power. The EU is both an arena for negotiations and a rule-maker by itself.

Table 3: Overview on major developments in Basel

Accord	Basel I	Amendments	Basel II	Basel III	Amendments/Basel IV
Year	1988	(1991)-1996	1999-2004	2009-10	2017 (continuously since Basel III agreement)
Main fields covered	Capital Adequacy Ratios through risk-weighting	More granular, introducing value at risk modelling (especially market risk)	3 Pillars: Capital Adequacy (including internal ratings-based approach, operational risk), Supervision Standards, Disclosure for more Market Discipline	Similar to Basel II but stricter requirements, more safeguards against sudden crises, and no output floors	Evolution of existing rules from Basel III, effective output floors through leverage ratios. “A key objective of the revisions is to reduce excessive variability of risk-weighted capital” (Basel Committee on Banking Supervision, 2017a, p. 1))
Countries included directly	G10: US, CA, UK, FR, DE, IT, BE, NE, SW, JP, CH	G10	G10 + some others (incl. HK)	G20 + others	Extended group of 28 countries (G20 + some other players)

IV.8 Cases

A preliminary case will evaluate one of the basic assumptions of the theory, which is that complexity is costly. This will be investigated with regard to costs through reduced financial stability. First, I will go through results from interviews with regard to the costs of complexity. Second, I will outline the case of how German state banks actually used complexity to engage in schemes that eventually reduced financial stability. This is to give some credibility to the abstract concept of regulatory arbitrage and its connection to complexity of regulation.

The subsequent cases are chosen based on both their feasibility for the model in general and whether they show characteristics to evaluate the individual hypotheses. This means that they are multinational banking regulation accords or laws (such that we have the three-layer structure of international, national, and bank-level reactions) and that they show complexity as this is the dependent variable evaluated here. An additional requirement is that information on the case was accessible. Especially with regard to the Basel negotiations, sometimes only few negotiation documents are available and no systematic process tracing is possible. A more detailed list of requirements for feasible cases can be found above.

With regard to arenas, there should be at least one case from Basel as this inspired the model initially. This Basel case can only evaluate the basic regulatory corridors-claim though. Especially the central planner hypothesis requires an actual central planner. The only multi-national entity that has institutions close to that in banking regulation is the EU with its numerous bodies that operate across borders. Thus, a case for the second hypothesis would have to be located in the EU arena. Another advantage of the EU is that it is more transparent than, for example, the BCBS. Thus, also the third, intertemporal hypothesis can be more easily evaluated in this context. The following cases were selected based on these considerations.

The first case goes into depth with regard to operational risk treatment in Basel II – capital precautions against legal and other non-credit risks from running a banking business. This case shows a complex outcome and state-players (US-UK vs. continental EU) that seemed to have diverging preferences with regard to how such capital precautions be regulated. The clash in preferences between the EU and the US was resolved through a clearly complex approach.

This makes this case promising as it fulfils the basic assumptions of my model. Furthermore, the Basel II-process is well-documented such that I have enough data for the case study. The focus on

this one particular aspect of capital requirements treatment (roughly 10 pages in the final accord) makes an in-depth analysis possible.

And indeed, this case can be regarded as support for the claims of the model (hypothesis H1). Even a US official stated publicly that they introduced discretions to the accord, meaning a regulatory corridor for regulators and banks where they could choose their own regulatory approach, to break a deadlock between the US-UK side and the continental European powers.

	Case I: operational risk in Basel II	Case II: CRR/CRD IV in EU	Case III: European bank resolution mechanism
H1: complexity as solution mechanism	✓	✓	✓
H2: social planner would introduce complexity	-	(✓)	✓
H3: complexity increases over time	-	-	(no support)
Main technical features of the cases	Specific international case with two blocs with diverging preferences. One point in time and no real social planner.	Broad case within EU institutional setting. Multiple social planner-like entities. Basel III as a baseline. No intertemporal component.	Similar to case 2 as it is part of the EU banking union framework. But there was an overhaul of the agreed rules, which allows for a limited intertemporal analysis.

Table 4: Summary of case studies and whether they support the hypotheses derived from the model. (✓) means support if one accepts EU institutions as social planners.

The second case is the implementation of Basel III into EU law in its Capital Requirements Regulation (CRR) and its Capital Requirements Directive IV (CRD IV). This case is more holistic and less focused on one point. Yet, it is promising for multiple reasons: First, instead of a soft-law accord, this case is about hard-law rules (especially in the CRR) that directly apply to states, which reduces noise such as sloppy implementation. Second, Basel III itself offers a good benchmark to evaluate where the European rules make use of leeway in the accord or where they even diverge from it to increase room for maneuvering for EU member states. Third, the European Commission and other European bodies such as the European Parliament and the ECB were crucial players in

the process. They are more powerful than, for example, the BIS and should, in theory, care for the fate of the whole EU. This brings them close to the social planner from my model, which enables me to test the model's prediction of a social planner also choosing complex arrangements in case the member states have diverging interests (hypothesis H2). Of course, they are not perfect social planners and some political factors have to be taken into account but that is possible in a case study. Eventually, this case shows support for H2 but also shows some boundaries for its analytical power when one cannot estimate the respective reasoning of a central planner. Last, this case broadens my research and checks its applicability in more institutionalized settings that are subject to constant control by all stakeholders in contrast to the relative anarchy of the truly international realm. Finding the mechanisms of my model here both increases the reliability of my central claim (H1) but also of the claim that a social planner would also not go for a cost-saving maximum harmonization approach if they regulate entities with diverging needs (H2).

The third case covers the European resolution regime for banks, which was introduced to make bank failures a credible threat. By reinterpreting results from Howarth & Quaglia (2016b), I find further confirmation for H1 and H2 in the negotiation process of the Banking Recovery and Resolution Directive (BRRD) and other European rules on resolution. States with diverging preferences, that can be traced back to structural differences and different positions on the crisis cycle, agree on highly complex rules to accommodate to these different interests. I go into two special cases within the European bank resolution regime and explore how they relate to the hypotheses: precautionary recapitalization of banks that face problems but are not insolvent and the minimum requirements for liabilities eligible as precautions for bail-ins (Minimum Requirement for Own Funds and Eligible Liabilities – MREL). Precautionary recapitalization, which prevents resolution of a bank, shows a high pressure for reform over time as all parties involved in the actual use of this provision were not satisfied with how it worked. Thus, it seems like a very likely case for reform where one could observe intertemporal developments as described in H3. Yet, this reform has not happened so far, such that this case cannot help to evaluate H3. MREL, in contrast, was reformed after it was initially introduced and might help with evaluating the intertemporal claim. However, this case also does not clearly show the mechanisms outlined in the model and not even a clear increase in complexity. As such cases of regulatory reform without too much noise from other developments are rare, these were already the most-likely cases to find such developments. Hence, this part of the model remains a thought experiment that cannot be supported by the case studies.

IV.9 Preliminary case: Complexity as a real problem

Before going into depth on the mechanisms of how complexity enters international regulation, I should examine one of the basic assumptions of this investigation: that complexity is costly, particularly the claim that it increases financial instability. And if yes, it is important to investigate what type of complexity produces such instability. This has been motivated in chapter II before but mostly based on secondary literature. These investigations often referred to cases from a specific regulatory framework or sometimes covered anecdotal evidence; a more detailed assessment is needed here as the costs from complexity from the most important underlying assumption of the empirical examination.

I will first go into what practitioners would regard as complexity to get a reference point on what types of complexity exist and how they relate to my definition. Then, I will show how regulators themselves have been talking about complexity as a problem for financial stability to set the stage for my further empirical research that takes costs from complexity as given. This will again relate the complexity that regulators are talking about to my definition of complexity as a regulatory set. Afterwards, I will go into an explicit example of how complexity was used to (mostly) legally circumvent regulation by one of the entities that seem least likely to do that: state banks in Germany prior to the Financial Crisis. This is important to give an idea on how these still theoretical considerations translate into the reality of regulation.

IV.9.1 Complexity as a practical problem for stability

Is complexity a costly problem or is that just a thought experiment that makes the regulatory corridors-model work? This is the overarching question of this section. But this question is more difficult to answer than one might assume given the extensive criticisms outlined in chapter II.

Large-scale, quantitative analyses with regard to the link between complexity and financial instability seem to be difficult. First, financial instability only materializes in crises and cannot easily be measured otherwise. These data points can only be drawn from occasions when instability occurred. Predicting what might eventually cause trouble is not a feasible strategy in a scientific sense. Hence, the sample size is small and one actual instability event in one country is likely to be correlated with instability events in other countries. This and many other factors create so much noise that the dependent variable of such analyses would be difficult to define in detail. Furthermore, international banking regulation is without a control group that could serve

as comparison. However, at some occasions direct quantitative correlations between complexity and costs can be found: Mariathasan & Merrouche (2014) show that internal risk modelling in a bank, once approved, can lead to banks playing regulators and lower capital requirements compared to similar peers that do not (or cannot) conduct such strategic risk-modelling. However, their exercise goes in depth with regard to only one particular regulatory measure and does not causally relate the strategic behavior of banks to complexity but to many other factors that might be a result of complexity (e.g., regulators being overwhelmed with work). Similarly, Goodhart (2011) goes into the matter of banks pushing assets off their balance sheet in the early Basel years, which did not reduce their risk but their regulatory burden. One could argue that this is an occasion where complexity (in the sense that banks can determine their own regulatory capital within boundaries) increases at least the expected costs through financial instability. The qualitative case I is very similar to that and thoroughly argues how such 'flexibility' for banks might be harmful. Yet, this is still not a systematic quantitative analysis of the issue.

In a work for the European Systemic Risk Board, Gai et al. (2019) give an overview on the costs of complexity from a rather holistic perspective and conclude that it threatens financial stability in many different ways. Most importantly through increasing workloads for supervisors, which might not work without losses in thoroughness.

Second and as mentioned before, complexity as a dependent variable can be problematic. In qualitative analyses, one can argue that one can regard some regulations as complex – especially relative to others – but these analyses cannot provide a threshold or anything alike that would qualify some rules as complex. Not to mention putting it on a cardinal scale. Colliard & Georg (2020) provide an idea of how to measure complexity based on treating regulation as algorithms, which can then be measured with methods from computer science. However, this approach is at an early stage and not suitable for my analysis yet.

Combined, these two points make it seem difficult to get actual confirmation for the implicit hypothesis that complexity contributes to financial instability.

Yet, practitioners and initiatives by them can serve as a proxy for whether complexity is harmful as their views on that are likely to take into account many of the information that one would otherwise reveal through statistical analysis. A central banker, who puts much time into discussing how to reduce complexity, is an indicator that this complexity is seen as a problem. Thus, I will try to argue based on interviews and document analysis whether and in what

circumstances complexity can be a problem for financial stability. Regulators seeing complexity as a costly factor would actually already suffice as input for the model as it works with expected costs of complexity.

IV.9.1.1 Evidence from Interviews

First, I asked my interview partners in every interview whether they would perceive regulatory complexity as problematic for financial stability. The first answer usually was that it depends or that one cannot say that. They often referred to the necessity of complexity to regulate complex products as they exist in the finance industry. However, when digging a bit deeper, many distinguished between different forms of complexity and referred to some of them as problematic. I focus on those answers that are related to complexity that is connected to the definition of complexity from the model.

One first general comment was that complexity is self-reinforcing (Regulator#22_2020). This is described as a typical hen/egg-problem: complexity leads banks to enter circumvention techniques, which then require new regulation that typically is even more complex. This way, complexity yields more complexity and it becomes the disease and the cure at the same time. If complexity is costly in general, it gets more costly over time through this mechanism. This is in line with theoretical arguments by Hakenes & Schnabel (2014), who discuss weaker regulation but the result is similar: more complex banks can more easily influence regulators as they might not fully understand the banks' structures compared to less complex ones. This would reinforce this hen/egg-circle. Buch & Goldberg (forthcoming) also show an empirical connection between regulation and complexity of banks (among other things) but they also show that post-Financial Crisis reforms have introduced incentives for large banks to become less complex. This might hint at a reduced role of the self-reinforcement of complexity.

A second, more common theme was how complexity in the narrower sense of the model might rather yield benefits than costs especially with regard to the criticized internal ratings-based capital calculations. Multiple regulators found it important to leave banks the opportunity to adjust capital requirements to the risk exposure of their assets to ensure risk-sensitivity (e.g., Interview_Regulator#24_2020).⁵⁶ This means that they see a point in giving banks room for

⁵⁶ The typical argument would be that simpler rules might drive banks into more risky behavior as they have no regulatory incentive to be more cautious. This argument is based on the assumption that banks would try to maximize their profits through investing into riskier assets as this is not punished through higher capital requirements.

maneuvering and increasing the scope of real capital requirements for one and the same bank depending on their internal ratings. This would stand in contrast to the model as more complexity would reduce costs here. However, this point was usually accompanied by suggestions how to reduce potential instability caused by divergences across banks: Regulator 24 themselves argued for less flexibility in defining the capital that serves as precaution against these losses. They preferred a narrow definition of eligible capital based on the current highest quality capital instead of a multi-layer system as before. They saw problems with potential regulatory arbitrage but would have preferred to tackle them by making related parameters more stringent. Furthermore, the claim on necessity of complexity to reach more stability was contested by other actors (Interview_Others#13_2019, Interview_Regulator#11 and 12_2019) while others supported it but acknowledged that this flexibility also comes at a cost (Interview_Regulator#21_2020). The move from Basel I to Basel II (including operational risk treatment) was seen as the “Opening of Pandora’s Box in terms of complexity” by one stakeholder that wants to remain fully anonymous.

Generally, a majority of interview partners associated complexity in the sense of the model with reduced stability as they answered a direct question on that with either agree or slightly agree. Many said that this was more the case for Basel regulations than for European ones. Thus, one can say that there is some support by the interviewed experts for the claim that complexity has costs attached even though they already see a trade-off with flexibility/risk-sensitivity.

The following cases will make use of the interview answers when appropriate. The actual case choices were also inspired by interviewees. Furthermore, I will compare the interview answers to the actual claims of the model in a brief section at the end.

IV.9.1.2 Evidence from publications and initiatives

Second, the Basel Committee has long been concerned with complexity. The then-chair of the Committee explicitly stated in a speech on finalizing Basel III that “[c]omplex rules can result in a number of undesirable outcomes. [...] Research has shown that simple rules can often produce more prudent and robust outcomes.” (Ingves, 2016). Among the undesirable outcomes that he mentions are that it is more difficult to oversee risks, that smaller stakeholders are unable to contribute to further developments of the regulatory issues, and that it “undermine[s] banks’ own ability to effectively implement the rules.” The latter probably gives an advantage to larger banks that have more leeway to maneuver through the paragraphs. Ingves explicitly states that simpler rules might even be “more risk-sensitive and robust than complex ones.”

This gives strong indication that Ingves as chair of the BCBS saw complexity of rules as costly and problematic – explicitly referring to financial stability. As his speech was a keynote at a scientific conference, he pitched a number of ideas that he would like to see more research on to pin that general sentiment down to actual numbers. Also interview partners such as Regulator#21_2020 mentioned efforts by the BCBS to reduce complexity.

Ingves' clear statement against complexity, which is in line with arguments by Haldane & Madouros (2012) and a speech by Haldane (2013) as representative of the Bank of England that were discussed before (see section II.1), is contrasted, for example by a speech by Andreas Dombret (2016)⁵⁷ of the Bundesbank, who rather sees complexity as stability enhancing. His main concern about complexity of Basel III is that it imposes compliance costs on banks and surveillance costs on regulators. He states that going back to times with extremely simple rules before Basel II was introduced would be desirable but unrealistic and that complexity is a second-best solution. He explicitly advertises complex regulation as potentially beneficial for banks as they can reduce capital requirements – while stating that capital requirements before the crisis were too low. Nevertheless, he admits that one would probably make regulation simpler if one would introduce it again from scratch.

However, it must be stated that Dombret's definition of complexity probably differs in scope and focus. While, for example Ingves (2016) already regards risk-weights as a main source of complexity in regulation, Dombret sees the entirety of rules including leverage ratios and other measures as complexity. This is an interesting difference as risk-weights with their multitude of parameters fit into my definition of complexity as this will reduce coherence of regulatory outcomes across banks. On the other hand, leverage ratios reduce discretion as they introduce a lower bound for regulatory outcomes. This means that much of the complexity that Dombret was talking about does not fall into my definition of complexity or even reduces it.

One has to consider their respective audiences there. While Ingves was speaking in front of academics in the international arena, Dombret probably had to defend the approach of his employer in front of representatives of banks that were regulated by them. This did most likely

⁵⁷ Dombret also mentions reasons for more complexity, especially in the EU, which is a good thing to remember for later (such as compromises). Moreover, him advertising complexity as a way to reduce capital requirements is interesting and fits into my ideas.

influence the tone of the speeches. While Ingves could be critical and forward-looking, Dombret had to defend outcomes that would be imposed on banks.

Another difference of both is that Dombret was speaking as representative of a participant of the Basel Committee while Ingves was speaking as its head. This makes Ingves more of an international social planner than Dombret. As I show in my model, social planners might have different preferences than individual actors. Altogether, both at least show concern about complexity in the sense of regulatory corridors.

A similar pattern can be seen on the European stage. Nouy (2017), then chair of the Supervisory Board of the ECB, openly argues that more harmonization is needed and that Basel III must be implemented consistently to reduce regulatory arbitrage and the resulting financial instability. She also admits that “[t]he single European rulebook is not yet single enough” to prevent regulatory arbitrage in Europe, which is very much in line with the model’s definition of complexity.

By citing Tucker (2014), she explicitly states that “[t]he more detailed the rules are, the more scope there is for getting around them.” Tucker argued that rules-based regulation that is supposed to restrict regulators from exerting too much discretion actually enables banks to play them. Especially as every case that does not exactly fit into the scope of one of the many detailed rules will be challenged. That is what I describe as discretion-enhancing complexity.

Nouy identifies three types of regulatory arbitrage that are all reducing stability – especially if accumulated across banks: “cross-jurisdiction arbitrage”, “cross-framework arbitrage”, and “intra-framework arbitrage”. The last point refers to loopholes within one regulatory framework and has no international aspect to it. Hence, this dissertation and the hypotheses that I developed refer to the first two forms of arbitrage. Cross-jurisdiction arbitrage is the classic case where different jurisdictions apply different rules and the banks exploit that to minimize their regulatory burden – in my definition from section III.1: international and increasing complexity. The cross-framework arbitrage refers to evasion of rules through moving operations to shadow banking or other less regulated sectors. While this does not seem to be directly related to the model of international regulation, it can occur combined with cross-jurisdiction arbitrage as I will show later in the case of German *Landesbanken*.

Nouy directly connects this to instability of the banking system: “Regulatory arbitrage undermines the basic idea of regulation, and it poses a threat to stability” (Nouy, 2017). These structures that enable regulatory arbitrage fit into my definition of complexity and she argues that this still is a problem on the international as well as the European stage. She even calls for introducing regulations instead of directives on the EU level in order to ensure coherent implementation of regulation in Europe as she fears ex post complexity due to directives.

This is strong evidence from a representative of the most important European supervisor of banks that complexity in the sense of my model is problematic and costly.

In contrast to that, Dombrovskis (2018) as a representative of the European Commission called for diversity in European regulation. He actually claims that diversity in rules – that Nouy had criticized – is stability-enhancing and enables diverse banking sectors across Europe. He advertises relaxations for smaller banks and SMEs in terms of how credits are regulated. His speech might have been adjusted to the audience of mostly representatives of German savings banks but he certainly could not argue completely contradictory to the Commission’s policies, meaning that the merits from complexity seem to be more important here.

However, when looking at the different roles of those giving the speeches, the picture becomes a bit clearer. Nouy as a supervisor with stakes in the regulatory process is concerned with the costs of failing regulation, Dombrovskis and others are additionally concerned about the reduced benefits from banks due to regulation being too strict (and not adequate for individual cases). This is a pattern that has also been present in interviews. Representatives of national or EU authorities were often concerned about what I regard as the benefits function. Supervisors and regulators, especially the international/European ones, were more concerned about the cost function.

Looking at these public statements of representatives of relevant authorities gives some support to the claim that complexity is costly and that regulators see it that way. This can also partially motivate the general logic of the model.

These theoretical considerations expressed in speeches and interviews can help to estimate whether regulators and supervisors see complexity as a problem for financial stability. It might, however, be useful to also look at actual cases that reveal some of the mechanics that lead from complexity in the international regulatory framework to financial instability. A surprising candidate for that are German state banks (*Landesbanken*) prior to the financial crisis and their

evasion tactics of domestic regulation in order to participate in the infamous asset-backed securities market in the US without holding adequate capital reserves for that.

While treating the concept of complexity and the resulting instability as abstract phenomena for most of this dissertation, this part explicitly spells out what problems in financial markets occurred due to which loopholes in regulation. This is related to what, for example, Nouy (2017) described when giving examples for regulatory arbitrage or evasion: setting up firms that are less regulated either because they are located abroad or do not fall under prudent banking rules anymore even though the bank is still liable. Such a case will be discussed in the following section to make the case for assumption a. clearer and not only based on whether supervisors talk about it.

IV.9.2 The case of German Landesbanken

One of the many troubling stories revealed during the Financial Crisis was that of German *Landesbanken* that were predominantly owned by public authorities of one or more German federal states (*Länder*) and local savings banks. Originally meant to provide local businesses with financial products that municipality-level savings banks could not offer, they grew at extraordinary rates in the 1990s and especially the early 2000s. Later, many of them had to be rescued with taxpayers' money or had to be resolved during the GFC as they had been heavily engaged in failing markets such as that of US asset-backed securities. *Landesbanken* had taken part in an investment euphoria that resulted in the crash in 2007 and 2008. They fulfilled the dreams of regional level politicians to participate in the mystical yet appealing world of international finance that also promised high returns. At the same time, international bankers regarded them as provincial and inferior – most likely not an unfair assessment. Martin Hellwig recalls an occasion at which he “was told by an international investment banker that, among investment bankers, the representatives of the *Landesbanken* used to be called ‘stuffies’ – because you could always stuff them with things you wanted to sell” (Hellwig, 2018).

These banks often had insufficient risk management. Some used rudimentary Microsoft Excel Sheets or even manual calculations to manage portfolios of several hundreds of high-risk assets (Bayerischer Landtag, 2008) or were seriously understaffed in the back-office while the front-office kept expanding (Landtag Schleswig-Holstein, 2011). This came not only from ambitions fueled by a euphoria but also from a unique feature of these state banks.

Investments in *Landesbanken* used to be extremely safe assets because their debt was guaranteed by the entities that owned them. Essentially, that meant that investing into these banks was almost as good as buying government bonds. Consequently, ratings were high and re-funding costs were low. But as *Landesbanken* got ever closer to normal commercial banks and competed with them in financing the local economy but also on other markets, this implicit subsidy of their business practices was no longer feasible under EU state-aid rules and was phased out after a ruling by the European Commission between 2001 and 2005. As their business model was falling apart, the *Landesbanken* started to make use of state guarantees while they were still in place (European Commission, 2002; Gubitza, 2013). They essentially “loaded the boat” (Bayerischer Landtag, 2008), meaning that they took up far more credit than necessary for their operations. Due to the slow phase-out of state guarantees this happened under the old refinancing conditions and enabled them to keep the advantage of cheap credit until at least 2015. Much of this excess liquidity was invested into the US market and especially into structured products whose value would massively deteriorate in the Financial Crisis. An outstanding example of this was the Saxonian *Landesbank*, Sachsen LB, which tripled its investments into (at least partially) high-risk assets between 2002 and 2007 from €13bn to €41bn (Sächsischer Rechnungshof, 2009). But other banks such as Bavarian BayernLB, HSH Nordbank from Hamburg and Schleswig-Holstein, and others were engaged in similar activities.

These engagements eventually led to tremendous losses for state banks and resulted in a crisis of these banks, which one can arguably regard as a blow to financial stability. Sachsen LB (the Saxonian state bank) failed within weeks in 2007 and many other of these banks contributed greatly to the amount of money that had to be paid by German tax payers to overcome the Financial Crisis. The decisive twist is now that they did not simply increase borrowing at low interest rates and invest this money but that they did so by using regulation-avoiding international vehicles. One watchdog recalls that they could actually choose the supervisor by relocating business (Interview_Others#13_2019). They set up conduits and other special purpose vehicles in Ireland, Jersey, or some Caribbean islands that did not show up in their balance sheets. I will show in this case that this avoidance of regulation by the *Landesbanken*, which was made possible through diverging regulatory regimes and loopholes in regulation, resulted in instability. It is easy to see that they would have been at least more resilient in the crisis if operations to reduce regulatory capital would not have been possible.

The unique feature of this case is that, in contrast to many fully private banks, the failures of some of these state banks were investigated by public inquiry commissions. As political bodies, they

rather focused on whether state governments could have known about troubles or shady risk management, of course. They also focused on how necessary bailouts and emergency credits were allocated. However, the reports of inquiry commissions also allow a glance into banks that use loopholes in regulation to engage in overly risky behavior with the purpose to increase profits. This is something that one cannot easily find for other banks.

I make use of this publicly available information and will try to show some occasions where these banks used discretion in regulation and how this most likely reduced financial stability. Regulation was not simply too low to prevent the instability, but supervisors (who act based on regulation) were played by the banks – mostly within the boundaries set by regulation. This was to a large extent possible through regulatory arbitrage and exploiting different sets of rules across countries, which overwhelmed regulators and especially supervisors, as we will see in the following.

IV.9.2.1 The evasion strategies of banks

The general pattern of regulatory evasion was always similar: setting up special purpose vehicles (SPVs) – sometimes domestically, mostly abroad – and giving out guarantees for them (and essentially being liable for them as if they were normal subsidiaries), which enabled the SPVs to invest more freely and, most importantly, removed the assets held by them from the banks' books. A re-occurring term in publications by state banks before 2007 was "Freisetzung gebundenen Eigenkapitals" (e.g. HSH Nordbank, 2003, p. 9) which translates into making equity capital available – a euphemism for reducing regulatory capital requirements for their portfolios. The more one could invest with a given stock of capital the better as this increased returns on capital. That is a normal behavior by banks and that is why there is regulation on how much capital needs to be held back when investing. This should not change if the bank keeps the same risk pattern but moves assets around. The issue here is that exactly this happened.

IV.9.2.1.1 HSH Nordbank

Take HSH Nordbank, which had to be rescued with €13bn of bailouts and guarantees by the states of Hamburg and Schleswig-Holstein as well as federal liquidity guarantees in the Financial Crisis (Dieckmann, 2013). HSH Nordbank got ever more invested into the US market and

“had one of the largest structured credit portfolios in Europe while having little equity. [...] I do not know any other customer or counterparty [...] that took such risks with a similar capital base.” (translated from German)

as former bank manager Luis Marti-Sanchez stated in front of an inquiry commission (Landtag Schleswig-Holstein, 2011, p. 302).

The way they achieved that was through several conduits and special investment vehicles one of which was called ‘Carrera Capital Finance Ltd.’ and located on Jersey. Carrera was endowed with a liquidity facility and could refinance itself on the financial market. It was not integrated into the HSH Nordbank conglomerate and did not appear on its balance sheet. This meant that far lower capital requirements were necessary for HSH Nordbank when using Carrera to invest into risky products. According to numbers from a board meeting, the Carrera construct enabled the bank to move the equity capital burden for assets located there to 0.056% in contrast to 30% in case of accounting for the capital risk on the books of the bank (Landtag Schleswig-Holstein, 2011). Later on, Carrera had to be integrated into the consortium again when its business model failed and risks were realized. The risks stored in Carrera were never really gone, they were just moved away from the core company.

Hence, HSH Nordbank obviously made use of loopholes in the international regulatory regime to reduce capital requirements. These transactions later resulted in losses for the bank that made a bailout necessary. The bank had essentially sold dubious papers to itself (as the special purpose vehicles remained owned and guaranteed by the bank) and this construct was failing now. This means that due to the evasion possibilities, regulation for exactly the same portfolio was weaker than it would have been without such complex regulation that allows for lower capital requirements if the special investment vehicle is located elsewhere.

IV.9.2.1.2 Sachsen LB

In an even more extreme case, Saxonian Sachsen LB ‘loaded the boat’ between 2002 and 2006 by investing heavily into off-balance SPVs, partially located in Ireland, and increased investment by these means from €4bn in 2003 to €26bn in 2007. The ratio between all regulatory capital and capital market activities (excluding all other activities) was only around 3.5% in 2006 (Sächsischer Rechnungshof, 2009). Even small decreases in value of these capital market activities were not covered by capital anymore. However, these risks were not accounted for in the books of SachsenLB and surprised its owners as well as regulators when things went south.

German regulator BaFin actually gave notice in 2005 that the bank's business model would only work if there were no market disruptions at all (Sächsischer Rechnungshof, 2009) but apparently could not do anything about that. The regulatory regime was allowing such constructs, otherwise agencies would have had intervened. Again, special constructs exploiting loopholes in regulation enabled SachsenLB to pursue a highly unsustainable business model.

As a specific example might serve an investment vehicle called 'Ormond Quay', which was located in Dublin. Sachsen LB used this conduit to invest into risky synthetic assets. Even though the bank's board knew that the risks remained with the bank, it was not included in its books and any stress tests or risk assessments. That had a simple reason, Ormond Quay alone had an exposure of more than ten times the core capital of the whole Sachsen LB in August 2007 (Ernst & Young, 2008). By moving business to a semi-external conduit, Sachsen LB could easily circumvent capital requirements and engage in activities that would not have been possible without making use of loopholes. At their peak, the profits from these excessive endeavors accounted for 82% of the group's overall profits. However, later they led to the downfall of Sachsen LB within weeks (Sächsischer Rechnungshof, 2009).

IV.9.2.1.3 Summary of evasion strategies

BayernLB from Bavaria shows similar patterns but the decision-making with regard to why, for example, foreign subsidiaries were founded and how assets were relocated is not clear. Emse (2005) indicates that some transactions might have had similar capital-reducing motivations as at HSH Nordbank and Sachsen LB but there cannot be made a serious case for that. One might speculate that the insufficient back-office of BayernLB's US office was related to its complex structures, which prevented supervisors from seeing that. However, there is no smoking gun for that. The same applies to North Rhine-Westphalian WestLB.

However, the witnesses and reports for HSH Nordbank and Sachsen LB paint a clear picture: there were evasion strategies to keep the same portfolio (or even riskier ones) with lower capital requirements. Motivations might also have included tax advantages and other reasons for setting up new firms in small countries but evading regulations certainly was a part of it as some witnesses stated. These state banks were making use of loopholes and the discretion that existed under the regulatory regime of that time to increase their revenues but that eventually increased financial instability at home as they could not even perform their normal functions after the crisis hit.

This rare look into banks' decision-making thus supports assumption a. If the banks had not had had the opportunity to evade regulation through the constructs they were using, they would have been more stable in the financial crisis. Instead, they were even at the forefront of banks that fueled the bubble before the crisis. This increased revenues for their owners, states and public banks, but it also increased costs. Giving them the opportunity to load the boat also was an active choice by German regulators, they wanted them to keep working as they did before for as long as possible. Regulators and supervisors also potentially knew about their activities (e.g., the Bundesbank checked Sachsen LB's activities) but did not act. Neither in terms of adjusting domestic regulation nor in terms of closing loopholes internationally – at least not that this would be obvious here. Thus, this case fits well into my model framework.

IV.9.3 Summary

Both speeches after the financial crisis by regulators and supervisors as well as the case of German Landesbanken indicate that complexity in the sense of my model seems to be costly and a problem for financial stability. The accumulation of exceptions, special rules, and national discretions probably leads to discretion for banks to evade rules through evasions strategies. This makes complexity a major problem and costly for countries.

At the same time, regulators usually denied to directly confirm that complexity is problematic when I interviewed them. They see a certain level of complexity as necessary to regulate banks properly. They also refer to a hen and egg problem here as banks use evasions strategies, which require ever more complex regulations, which create new evasion possibilities requiring more complex solutions (Interview_Regulator#11_2019, Interview_Regulator#22_2020, Interview_Regulator#23_2020). However, when breaking down the term complexity to increased discretion, most regulators and supervisors also saw it at least as small problems for financial stability, usually they also advocated for less complex solutions.

Using this foundation, I will now turn to the actual cases of how regulation was negotiated and how complexity entered in the course of these negotiations. The first case covers a topic that is very similar to credit risk requirements and their criticized internal ratings-based models: operational risk requirements in Basel II. The operational risk treatment case is more suitable for a case study as it was newly introduced in Basel II, which makes it clearer to track than credit risk precautions that exhibit a number of legacy issues. This will be explained in more detail in the following cases.

IV.10 Case I: Treatment of operational risk in Basel II negotiations

One first big shift of international regulation towards complexity was the introduction of Basel II. Between 1999 and 2004 states came up with a new, more granular – they called it risk-sensitive – approach to banking regulation and supervision that was much more far-reaching and more detailed than Basel I. One of its main features was that banks were now supposed to participate in regulation by calculating their own risk exposures given they qualified for that. This was supposed to make regulation more flexible and less disruptive while also safer. This idea applied to the old credit risk from Basel I but also stretched to other types of risk such as operational risk – the risk stemming from running a banking business aside from credit and market risks such as computer failures.

This operational risk treatment will be investigated in this first case with regard to complexity and how it emerged. Hypothesis H1 predicts that diverging preferences of states result in complexity, which is a solution mechanism that reconciles the different standpoints. Operational risk treatment in Basel II exhibits such complexity, as I will argue in this case study, which means that the eventual regulation allowed for diverging treatments of the same portfolios and business models. The purpose of this case is to trace the process that led from relatively clear proposals for hard rules by the BCBS to a vague outcome that included much flexibility for regulators and even banks in applying the common rules.

I will show that preferences of a continental European coalition clashed with those of an Anglo-American alliance and that this resulted in the increase in complexity compared to initial proposals. The very narrow focus of this first case allows to dive into how single provisions emerged and what regulators were trying to achieve with that. This lends credibility to the basic predictions and mechanisms of the model as they are confirmed in this case.

IV.10.1 A new capital adequacy framework

Basel II was negotiated over several years and the start/end of every negotiation phase was marked by a consultative paper or the eventual accord. Three such consultative papers were published. The first one (CP-1, Basel Committee on Banking Supervision, 1999) was a collection of ideas on what should be addressed in the new accord and introduced the three pillars

approach.⁵⁸ The second consultative paper (CP-2, Basel Committee on Banking Supervision, 2001a, 2001b) was the first explicit proposal for regulation with detailed plans of how to regulate different risk types and how to supervise banks. CP-3 (Basel Committee on Banking Supervision, 2003a) then was the culmination of the deliberations that took place with regard to CP-2 and already includes much of the final accord (Basel Committee on Banking Supervision, 2004). Thus, changes between CP-3 and the final accord are minor in many fields.⁵⁹ There is one final period that takes place after the accord as its implementation was different across countries, which would be described as *ex post* complexity in my theory. The story does not end here but revisions of the accord partially already fell into a period of financial turmoil and changed preferences. For simplicity, I refer to the 2004 accord as an endpoint to the international discussion.

The consultative papers are the result of deliberations in the BCBS and its working groups. While the final accord is based on consensus among BCBS members, the CPs represent stages in negotiations that require external input. Hence, the CPs are like a window that enables us to look into the negotiation process. Yet, they are still negotiated in closed settings among regulators from the member countries of the BCBS. In case of Basel II, this was a group of mostly developed countries, mostly consisting of the G10, Swiss and European regulators/supervisors, and some others. The group was traditionally dominated by an Anglo-American bloc but the European powers gained more importance compared to the Basel I negotiations. Despite both European and non-European countries (e.g., Japan) being important actors in the BCBS, I will focus on Eurozone and US/UK positions here. The European national regulators' agendas might have differed from those of the ECB, which represented the Eurozone as a whole but the data on that is scarce while the ECB has been rather transparent and, thus, serves as a proxy for a common "European" position. On the US side, multiple regulators play a role (the Federal Reserve Bank, the NY Fed, the Office of the Comptroller of the Currency, and the Federal Deposit Insurance corporation) but they all represent the same constituency. An important outside actor might be the Institute of International Finance (IIF), which is the most important lobby organization of large banks. I will account for that when assessing actors' positions.

⁵⁸ The three pillars are minimum capital requirements (pillar 1), which was a direct successor of Basel I and contained the most direct and explicit regulations that apply to banks, supervision (pillar 2), and market discipline (pillar 3), which basically meant that markets should be enabled to exercise control over banks by making them more transparent. A pillar 2 approach toward regulating something would mean that rather the general supervisory framework would be regulated while a pillar 1 approach would already set some rules and deprive supervisors of flexibility.

⁵⁹ This applies to the parts of Basel II that I review here, not necessarily to all other parts.

Tracing the process of how Basel II emerged as a whole would be a task that could fill multiple books. I will focus on one particular area of capital requirements regulation, which is operational risk treatment. This type of risk was not addressed in Basel I and only occasionally drew attention before the Basel II negotiations, which enables me to look into the topic without going into fundamental legacy issues.⁶⁰ In the following, I will first introduce operational risk and how its treatment relates to the theory from chapter III. Second, I will explain the process of how operational risk treatment has become more complex over time. Third, I will relate this to preferences of states and check for lobby influence. This section concludes with relating this case to the hypotheses and assumptions derived from the regulatory corridors-model including a discussion of what mechanisms might have been at work here.

Thus, I show the outcome and its relevance for my model first and go into what might explain this outcome later. The rationale for that is that in the model I am offering an explanation for complexity in international banking regulation, which is seen as a costly problem of such regulatory harmonization attempts. It is important to show how the respective case exhibits complexity as the theoretical definition of complexity as a regulatory corridor is not as obvious as, for example, number of pages or other measures. Here, I find that operational risk requirements treatment under Basel II exhibits crucial features such as different applications of the rules across jurisdictions and hard pillar 1 regulations being partially moved into pillar 2, supervision, where domestic regulators can exercise more discretion, which is in line with the definition of complex rules as those that allow for different treatment of the same portfolios (resulting in arbitrage opportunities and other costs).

There are two competing explanations for such complexity that I have explored in previous chapters: lobby influence that results in costly complexity for the sake of (international) bankers and my model that this complexity reconciles diverging preferences of states and, thus, yields benefits. I explore both explanations through assessing negotiation documents and other sources such as testimonies and position papers. The conclusion from these openly available sources is that the position of international lobbyists was within the boundaries of what states explicitly made their goals in the negotiations.⁶¹ This provides credibility to the claim that states'

⁶⁰ For example, the reform of risk-weights from Basel I can only be assessed appropriately as an intertemporal issue from Basel I to III/IV and a detailed analysis of that would take much longer.

⁶¹ Remember that my model makes no predictions about how diverging preferences emerge. They might very well be a result of extensive lobbying; the important assumption is that states have diverging preferences. This means that a regulatory capture could happen domestically but not equally across every country. I would doubt that such regulatory capture would be total but even if it were, this would not affect this investigation.

preferences had a dominant influence on the complex negotiation outcome. Further documents and statements support this claim.

It is important to keep in mind that the processes described this section took place in the first half of the 2000s and the implementation of its results was supposed to take place in the second half but was disrupted by the Financial Crisis in 2008. Thus, the (long-run) practical implications of some results are rather based on impact studies or predictions than on actual experiences.

IV.10.2 Operational risk treatment and how it relates to the theory

The theory of regulatory corridors would predict that greater scope and the potentially more severe effects of regulation lead to more contestation across countries with different preferences which would be resolved through rules that states or banks could apply at will to some extent. At a first glance, this certainly is the case with Basel II as countries struggled for five years and through countless negotiation meetings to come up with the accord and it became a complexity beast with much discretion for national regulators, choices for banks that could reduce their regulatory burden, exemptions from rules, and even severe ex post deviations from major signatories. However, this is well-known and was described as a lobbying success in the past (Griffith-Jones & Persaud, 2003). In the following, I will use the case of newly introduced operational risk (OR) precautions in Basel II as a subject to examine how preferences of states and lobbying influenced the eventual accord.

Credit risk capital charge	Credit risk capital charge
	Operational risk
	Market risk
Basel I	Basel II

Table 5: Distribution of total capital charges in Basel I and Basel II

Operational risk might include legal risks or potential problems due to breakdowns of IT systems or human failure (Basel Committee on Banking Supervision, 2002) – it is basically a collection of risks unrelated to the core business that occur when operating a bank.⁶² This type of risk accounted for approximately 20% of the economic capital held by banks before Basel II and, thus, constituted the second-most important risk category behind credit risk for a bank's internal risk management (Basel Committee on Banking Supervision, 2001a; Holtorf et al., 2001).

Basel I did not explicitly account for such risk. Whether the actual operational risk was already incorporated in credit risk requirements from Basel I or not apparently was subject to discussion between regulators. The BCBS, for example, saw Basel I as a one-size-fits-all approach that created a lump-sum capital charge for all types of risk (Basel Committee on Banking Supervision, 1999).⁶³ This was not seen as appropriate anymore as the purpose of Basel II was making regulatory capital more adequate to banks' actual risk profiles in all regards.

A core idea of the new accord was to distribute regulatory capital across risk types instead of calculating it based on credit risk alone. This means that there were separate precautions for credit risk, operational risk, and other risk types. We will see that regulators argued and actually expected that a more risk-sensitive treatment of credit risk would reduce capital requirements for this type of risk and that they could add operational risk requirements without greatly changing existing total capital requirements based on Basel I. Following this logic, one could say that including operational risk was necessary as old capital requirements tended to overstate credit risk to account for other risk types; a more risk-sensitive and, thus, more accurate measure of credit risk precautions meant that other risk types would have to be addressed individually. This line of argument is important to keep in mind when assessing individual positions as well as outcomes.

The increasing size of banks, digitalization, and interconnectedness of markets made operational risk an ever-larger factor for overall risk exposure of banks, which is another reason why it was included in the proposals for a new regulatory accord. Bringing regulation closer to covering real

⁶² Reputational risks and other “abstract” risks are excluded.

⁶³ The lack of risk-sensitivity in Basel I was one of the main reasons for its overhaul – as described before. Yet, operational risk might hit banks regardless of their asset-structure (whether and how one can estimate operational risk accurately was one of the contested points in the Basel II negotiations). A regulation that is not risk-sensitive will thus create buffers for operational risk (or any other potential losses) especially for ‘safer’ banks, making them even more resilient.

risks would actually have been a contributor to more stability. The design of precautions for such an important type of risk would matter for stability.

When employing the simplest possible measure for complexity, pages of regulation, the relevance of this example becomes apparent. While CP-1 only mentions OR in one paragraph, CP-2 already includes a five-page outline of how to treat OR including three approaches with different levels of sophistication. The greatest step then comes between CP-2 and CP-3 when major parts of the existing proposal were dropped and new (more complex) measures were introduced. The number of pages increases to 10. This period between CP-2 and CP-3 will be at the center of my investigation – especially the introduction of the Advanced Measurement Approach added much complexity in the sense of the model. Only slight changes were then made in the final accord.

We will later see that complexity especially increases between CP-2 and CP-3. At this stage, a switch from a purely indicator-based approach toward more complex arrangements happened, which forms the core of this case study.

Thus, the case of operational risk in Basel II exhibits many features of what I attempt to investigate. There are diverging preferences between members with regard to the treatment of operational risks throughout the negotiation process. Especially the US has been vocal in criticizing the approaches taken by the BCBS. The eventual regulation is a complex result of these preferences with far more room for maneuvering than in the initial proposal.

For the sake of clarity, I will first show the process of how the proposals became more complex over time. After that, I show the preferences of the important actors involved in this development. Last, I will connect the two stories to show how complexity was a solution mechanism to diverging preferences.

IV.10.3 The story of operational risk treatment in Basel II

While the exact definition of operational risk was an ongoing issue in Basel,⁶⁴ the central issues of this investigation are the approaches under Basel II to calculate operational risk requirements and mitigation techniques against regulatory arbitrage or mistakes in the most complex approaches, a floor. Four major approaches (and some extensions) were discussed and three

⁶⁴ It is also difficult to disentangle lobby interests and state preferences here, which is why this will not be covered.

made it into the final accord. I will briefly describe the main features of the approaches in the following. I will also argue how the respective approach relates to complexity and the role of a floor. This mostly refers to the period between CP-2 and CP-3 as most changes were incorporated here. Hence, I will treat the older CP-2 approach as a benchmark for changes.

The main points of regulatory treatment were motivated in a paper by a working group on OR a few months after the publication of CP-2 (Basel Committee on Banking Supervision, 2001b). This working group comprised representatives of the BCBS member countries as well as the European Central Bank and the European Commission. This paper probably is the most powerful resource to trace the development of OR treatment in the negotiations. It forms the basis for exploring the following negotiation process. The report also explicitly states when industry groups were involved in finding a regulatory compromise (e.g., when reducing the OR capital charges in the indicator-based approaches), which will be useful later.

IV.10.3.1 The three approaches and the dismissed one

In the following, I will outline the different approaches to calculating operational risk capital requirements starting – just like the proposals – with the less complex and sophisticated ones.

The Basic Indicator Approach (BIA) is simple and straightforward as it only relies on the indicator gross income and a specified share of that (α) as a risk buffer for operational risk. The idea behind this is that banks without a sophisticated back office might not (want to) qualify for more complicated approaches but should hold capital against potential losses. The approach takes into account positive gross income of the past three years⁶⁵ and multiplies it with the factor α set by regulators (agreed on by the BCBS). It might be due to lobbying that this factor is 15% and not higher as planned earlier as the IIF openly advocated to set this factor low (Institute of International Finance, 2001) and the BCBS working group on operational risk acknowledged that its decision-making on the matter originated from discussions with the industry (Basel Committee on Banking Supervision, 2001b). No particular requirements are associated with using this approach and it does not open much room for evasion.

⁶⁵ The ECB (2001) actually pressed for that when responding to CP-2 as gross income can be volatile and negative values would actually reduce the regulatory burden while nothing justifies the assumption that a bank that makes losses would be less exposed to operational risk.

	Basic Indicator Approach (BIA)	Standardized Approach	Advanced Measurement Approach (AMA)	Internal Measurement Approach (IMA)
Basic setup	Indicator-based: 3-year gross income is the indicator and this is multiplied with a pre-agreed value alpha (15%) that constitutes the operational risk precaution.	Indicator-based: Like BIA but the more indicators based on different business lines whose gross income (usual indicator) is multiplied with a value beta (12%-18%)	Supervision-based: Regulators define a certain framework of internal controls that should result in internal OR precautions.	Based on internal indicators calculated similarly to the credit risk precautions (internal ratings-based models). But regulators could set the multipliers (similar to purely indicator-based approaches)
Size of banks that would use this	Small	Small to medium	Large	Medium to large
Opportunity for arbitrage and evasion	Low	Fairly low	High	Medium
Used by	EU	EU	EU and US	Not used
	Included in Basel II			Not included

Table 6: Modes of calculating regulatory operational risk precautions in Basel II.

The standardized approach is more sophisticated and assigns individual multiplying factors (called beta) to different business lines. Three-year average gross income of each business line is the decisive factor to calculate capital charges but negative numbers from one business line can offset positive ones from another one. The beta factors that vary such that business lines like asset management only have OR capital requirements of 12% of gross income while payment and

settlement require 18%. Hence, it might make sense to switch to the standardized approach in case of high gross income in 'safer' business lines while staying in the BIA might be worthwhile for firms that whose main business is in the riskier areas. There are two approaches, the normal and the alternative one, that only differ in terms of whether the business lines retail and commercial banking are treated like all others or based on loans and advances.

The use of the standardized approach requires approval by supervisors, which mostly refers to the bank being able to clearly distinguish between business lines in terms of gross income. The qualifying criteria also include proper risk management for internationally active banks. The standardized approach makes calculations slightly more granular and complex yet also allows for higher risk-sensitivity as some business lines might just be less exposed to OR.

These two approaches are strictly indicator-based and banks/supervisors have relatively little discretion there. They are the less sophisticated ones and add little to complexity.

The internal measurement approach (IMA) was the most sophisticated way to calculate OR capital requirements in CP-2. It was based on interplay between supervisors and banks to estimate expected losses within the same business lines as in the standardized approach. This would have required estimating probabilities and severity of events that would trigger losses. A factor gamma would also have been defined by supervisors to calculate the capital requirements similar to the other approaches. This means that the IMA essentially replaced the indicator of gross income by semi-internal estimates. Yet, the IMA as the most sophisticated and complex approach from CP-2 still relied on factors that could be directly controlled by public agencies. It was to some extent similar to the internal ratings-based approach (IRB) to credit risk where banks calculate internal indicators but regulators set the multiplier that results in how much regulatory capital they have to hold. This approach, thus, already exhibits some complexity and leaves discretion to banks and supervisors. On the other hand, outcomes of regulatory assessments would still have been reproduceable when getting the data from a bank. However, it was dropped in the discussion leading to CP-3 and replaced by the advanced measurement approach (AMA).

The AMA is fundamentally different from the less sophisticated approaches as it rather outlines criteria for assessing a bank's internal OR management and does not specify regulatory capital. This approach adds immense complexity as already indicated by the number of pages and annexes associated to it in the accord. Essentially, these guidelines refer to how to assess the appropriateness banks' internal risk measurements for expected and unexpected losses from

operational risk. While the BCBS (2001b) regarded the AMA as a pillar 1 approach that would lead to regulatory capital charges, the boundary between that and a supervisory, pillar 2, approach appears blurry.

Essentially, this approach means that as long as banks set up appropriate back offices and have the means⁶⁶ to calculate operational risk, they can basically use the resulting economic capital as their regulatory capital. It gives guidelines to banks on how to come up with this economic capital but is far away from the prescriptive regulatory capital calculations of other approaches.

This is a tremendous increase in complexity in the sense of my investigation compared to the IMA, which was dismissed in favor of the AMA. Banks that make the investment of setting up a back office and procedures that satisfy their supervisors can calculate their own capital. This means that a bank can reduce its regulatory capital easily and without violating the rules.

Moosa (2008) shows how AMA enables large banks to minimize their regulatory burden after taking the initial investment of adjusting to the new supervisory standards. This has multiple costly effects: First, it means that the banks might play the regulators and adjust parameters such that they comply with regulation but reduce their precautions fundamentally. This means that regulators have to invest heavily into supervision and banks might still hold too little capital to cover losses compared with their peers. Second, this approach gives an advantage to larger banks that can cover the costs of setting up an appropriate back offices. If they increase their gross income, the AMA does not necessarily increase their regulatory burden, while it does for smaller banks that use other approaches. This reduces competition, which is costly.

One and the same bank can face very different regulatory capital requirements for operational risk based on the approach it chooses and depending on how strictly its supervisor acts.⁶⁷ This corresponds to increased complexity and happened between CP-2 and CP-3.

IV.10.3.2 The floor

The dangers and costs of such complexity were also seen by the BCBS, which is why they proposed a floor for such models. The working paper on operational risk (Basel Committee on Banking Supervision, 2001b) – where the IMA was replaced by the AMA – proposes a permanent floor of

⁶⁶ Most importantly, five years of internal data on operational risk.

⁶⁷ One point that reduces complexity is that banks cannot freely choose between approaches. As soon as they enter a more sophisticated one, they cannot go back.

75% of the standardized approach capital charge. This was replaced by a transitional floor for IRB and AMA in CP-3 (Basel Committee on Banking Supervision, 2003a) and the accord such that banks would have to hold a decreasing share of Basel I capital requirements (which combined all kinds of risk) until 2009. Supervisors were only encouraged to apply a floor after that. Whether this would have resulted in a permanent floor or not is difficult to say as the Financial Crisis overturned all developments of the 2000s. Yet, it certainly constitutes an increase in complexity as it reduces the coherence of regulation as soon as regulators abandon the floor or find other arrangements.

There were some other changes in CP-3 that fit less into the picture of increasing complexity but rather refer to weaker regulation. Most important, there was a “reduction in the overall level of the operational risk capital charge” (Basel Committee on Banking Supervision, 2001b, p. 2). While the original estimate was that 20% of economic capital was held back for operational risk in banks, this was seen as too high later – explicitly after deliberations with the industry (ibid. pp. 3-4). This was considered when setting the values for alpha and beta in CP-3 and the accord. Smaller banks that would not qualify for (or refrain from) using AMA would profit from that and it would enable them to reduce their regulatory burden vis-à-vis earlier plans. This switch is not part of further investigations though as it might very well be in the interest of states to follow this approach but it is not possible for me to disentangle industry and country interests.

IV.10.3.3 Implementation and abolishment of AMA

Another point in time when complexity could enter was the implementation of the final accord (and its extensions). When we only focus on the two biggest actors in Basel at the time, the European Union generally implemented the operational risk parts in its Capital Requirements Directive (Directives 2006/48/EC and 2006/49/EC, 2006) while the United States vowed to only implement it partially. The Basel II package got only mandatory for the largest US banks and operational risk management in line with the accord was limited to these banks (and opt-ins) as well. Furthermore, only the AMA approach was permitted, the other two approaches were not supposed to be applied in the US (Federal Deposit Insurance Corporation, 2006). Hence, the international framework became messier as smaller US banks were still under Basel I treatment and larger ones only applied the AMA. This would make Basel II OR treatment rather a supervisory reform for the largest banks in the US than a holistic reform of OR regulation. This different treatment of smaller banks in the US in general was also criticized as problematic by a regulator (Interview_Regulator#24_2020).

There is also some retrospective evidence that the Basel II treatment of operational risk was problematic. First, the distinction between bank types and especially the AMA with its possibility to reduce charges for banks that are large enough and seem to have good operational risk management seemed inadequate given evidence that operational risk realizations were comparable in relative terms across banks of different sizes and types (De Fontnouvelle et al., 2004, as cited in Dierick et al., 2005). This contradicts the claims that a superior risk management regime would justify reduced capital requirements and especially the absence of a permanent floor to reduce deviations across banks seems odd given this evidence.

Second, the self-regulation of operational risk charges was dismissed after the Financial Crisis and reformed toward a more standardized approach that leaves less room for maneuvering (Migueis, 2018). This was explicitly motivated by the Basel II framework being “unduly complex and that the AMA has resulted in excessive variability in risk-weighted assets and insufficient levels of capital for some banks” (Basel Committee on Banking Supervision, 2016b).

Indicator-based approaches of course also induce costs (or rather: reduced benefits) as they might reduce banking activity by being rather restrictive and inefficient as Bonsón et al. (2007) have shown for Spanish banks. However, this is the whole point of the model: benefits of complexity might outweigh the cost.

This story shows an increase in complexity especially with regard to the switch toward the AMA and the abolishment of the floor. This was costly in many regards: less financial stability, higher supervision costs, implementation costs. Additionally, the unequal treatment of larger and smaller banks (as some could afford the switch to sophisticated methods and others did not) is costly as it reduces competition.

The great question now is: where did this complexity come from and why did it become part of the accord? Was it the result of lobbying and preferential access to regulators by big banks (which would profit most from the AMA)? Or was it the result of states solving a gridlock in their best interest as predicted by my model?

IV.10.4 The explanatory variables

Operational risk was subject to extensive discussions among regulators in Basel due to diverging preferences how it was supposed to be included in the accord. In line with the empirical strategy

from section IV.4, I will examine the different positions with regard to the dependent variable. The dependent variable here is the treatment of operational risk, especially the approaches toward OR capital charges including a floor to reduce room for maneuvering. As argued in the previous section, the complexity of this OR treatment was mostly increased between CP-2 and CP-3 and during implementation. I will first discuss the preferences of actors in the BCBS and will later check for lobby involvement that might explain the complex outcomes of the negotiations. As stated before, my focus with regard to public actors will be on the United States and the European Union as the two big regulatory areas represented in the BCBS. Especially with regard to the EU, this is only an approximation as single member states are represented in the BCBS (and probably even more important) but external communication was dominated by the ECB even though it was not necessarily the dominant actor in Europe.⁶⁸ Furthermore, the UK as an EU member apparently had preferences similar to that of the US.

Amid the troubles of the Asian Financial Crisis, a Russian sovereign debt default and ever-more apparent problems with the Basel I risk-weighting framework, it was the old Anglo-American coalition led by the New York Fed chairman McDonough (also head of the BCBS) that called for a new, more risk-sensitive Basel Accord (The Economist, 1999). But the negotiations proved to be much more difficult than previously thought and took way longer than expected. In the end, the EU was the entity committed to implementing the new Accord while the US only picked the most sophisticated methods, which it would only use to regulate its largest banks (Federal Reserve Bank, 2003).

Whatever the overall risk-sensitivity argument and the general goal of more financial stability, it was important to regulators that the inclusion of operational risk would not increase the total regulatory burden put on banks. For example, the ECB explicitly stated that it wanted banks to be able to reduce their regulatory burden due to credit risk precautions in order to achieve neutrality vis-à-vis pre-Basel II overall regulatory capital requirements, which was supposed to also explicitly include OR and market risk (see Dierick et al., 2005). This seems suspicious if one argues that operational risks increased in the past and could only be justified if credit risks would have decreased in the meantime – maybe that was the case due to better risk management but setting neutrality as a goal of renewing regulation still seems dubious. This neutrality certainly was something banks and their lobbyists were aiming for (or rather a reduction of capital charges).

⁶⁸ The actual, political European executive agency for banking regulation, the European Commission, is also an observer in Basel but it did not publish much on operational risk either. This might be related to the Commission being representative of all EU members (including the UK), while the ECB only represented the Eurozone (without the UK).

But regulators also aimed to achieve that within their constituencies, which probably informed their proposals for regulation.

The overall discussion how to achieve risk-sensitivity was very messy with preferences changing in its course – just take the change of the US from being an initiator of Basel II to only implementing it partially and relying on its supervision capabilities for the rest (Federal Reserve Bank, 2003). Operational risk treatment specifically was a subject that was highly contested. This included the ways of how to calculate regulatory capital but also points such as the actual definition of such risks. The frontline emerged between those who saw OR as a quantifiable risk category, which in turn could be addressed with pillar 1 measures, and those who saw OR as basically non-quantifiable and wanted it to be put into pillar 2. Treating operational risk as quantifiable or non-quantifiable (at least not reliably) and, thus, rather as uncertainty than risk, has major implications for how to approach it – namely rather through a supervisory approach to reduce uncertainty.

A quantifiable risk enables regulators to set up precautionary capital charges that insure against such risks up to a certain point. This is what the CP-2 proposal introduced: capital requirements based on business activity and on loss data from across the industry (in the standardized approach) or individual loss data. Yet, this already shows a problem with such an approach as especially the less sophisticated approaches included no incentive to reduce operational risk (also criticized by the Institute of International Finance, 2001). ‘Punishing’ banks for high gross income seems relatively unrelated to operational risk.⁶⁹ In general, one can only approximate requirements that might compensate risk realizations with a certain probability. The better this approximation, the higher the accuracy of the capital requirement.

Lump-sum approaches such as the BIA and the standardized approach are the one solution that resolves this trade-off between simplicity and accuracy in favor of simplicity. This would have applied to the IMA to some extent as well. Yet, this was already a more complex but potentially also more accurate approach within the same regulatory universe of choosing indicators (in this case individually calculated ones). Hence, the quantifiable operational risk would have been translated into capital precautions that would have permanently insured a bank against operational losses with a certain probability.

⁶⁹ Even though one could argue that high gross income might very well be correlated with more business activity, that in turn could be correlated with higher operational risk.

IV.10.4.1 Eurozone

The CP-2 approach, thus, represents the one side of the argument and was explicitly supported by the ECB in its comments (European Central Bank, 2001). It declared that “[t]he proposals concerning the treatment of operational risk are broadly shared” (p. 11). It saw necessity for changes only with regard to specific issues and mainly focused on the two simpler approaches as it saw disadvantages for small and medium size banks when using these simple approaches. Its suggestions were aimed at a “capital charge [that is] prudent and fairly reflect[s] the true risk profile of the bank” (p. 11). This basically is a hint that recalibration of alpha and beta values should consider competition effects for banks that use these approaches vis-à-vis IMA banks that might be able to reduce their regulatory burden. Aside from this, the criticisms rather concerned technical or incentive issues, which the ECB wished to address through pillar 2 measures. This mainly refers to a point that seems of much more importance to US regulators as we will see later: a capital charge on operational risk based on an indicator such as gross income (which is relatively unrelated) does not incentivize banks to reduce operational risk.⁷⁰

As the major player concerned with systemic stability within the Euro area, the ECB had to represent EU positions here. As an independent bank modelled after the German Bundesbank, it most likely only pursued the interests of the Eurozone a whole and not particular national interests. This would explain the stance regarding relatively equal treatment of different sizes of banks as the Eurozone inhibited both very large and a great number of small banks that even dominate some national markets.

National European supervisors (and the European Commission) remained relatively silent in public regarding the package. However, it seems fair to assume that, given the negative reaction of Anglo-American regulators to the BCBS proposals, European regulators were the driving force behind the approach chosen in CP-2. The only other major player that could have been influencing the proposals in the BCBS was Japan. But Japan alone would probably not have been able to introduce and uphold such proposals in a committee consisting of all major Western powers. Thus, it seems reasonable to assume that also European national regulators were behind the broader CP-2 proposal.

⁷⁰ See also the ECB’s comments on CP-3 where it emphasizes potential problems of smaller banks that might not fulfil the eligibility criteria for the standardized approach but would be punished for prudential behavior under the gross-income-based approach (European Central Bank, 2003)

IV.10.4.2 United States and United Kingdom

The old winning coalition from Basel I, the US and the UK, apparently had similar preferences on operational risk treatment: they were not pleased with the content of CP-2. They were standing on the other side of the argument on operational risk treatment and did not see the simple approaches with (more or less) lump-sum risk precautions under pillar 1 as appropriate and advocated for better regulating the supervision of banks to reduce operational risk. This stands in stark contrast to the indicator-based capital requirements solutions to increases in operational risk that the BCBS presented – even though multiple US and UK agencies participated in its meetings and working groups.

Their discontent with CP-2 proposals was based on multiple arguments. First, as the deputy governor of the Bank of England stated:

“I feel it would be inappropriate to expect most banks to hold an additional cushion of capital to cover these sorts of very rare events: it would either be grossly excessive for most of the time, or alternatively seriously inadequate if a major problem arose.” (Clementi, 1999, p. 6)

Which is why he rather wanted operational risk to be covered by pillar 2 supervisory standards and not in pillar 1. If a realization of risk is higher than the buffer one can either increase the buffer or abolish it (or create mutual insurance, which is not considered here). As only an adequate buffer would provide insurance, everything below that would only waste resources. Only thorough quantification of risks could enable banks to hold enough buffer.

Second, the (non-existent) incentive effects of indicator-based solutions were seen as problematic. While the ECB just wanted to increase supervisory oversight to tackle the incentive effects, the Comptroller of the Currency, John Hawke, saw this as a deal-breaker. His argument was that

“two banks engaged in an identical line of business may present vastly different quantities of operational risk when the internal control systems of one are significantly better than those of the other” (Hawke, 2003a).

Thus, he favored a pillar 2 approach under which banks with the same characteristics could be treated differently based on their operational risk management. This was not an exclusive opinion

of Hawke but also others, such as McDonough (2003) himself (in his capacity as president of the NY Fed) supported this view and advocated for flexibility.

This argument somehow represents the opposite to the solution mechanism I investigate: if two banks are identical in terms of their business, they could be exposed to different levels of operational risk, which makes highly prescriptive rules for OR precautions inefficient and costly. The benefits from flexibility for regulators to treat them differently would be high as the bank with low OR would not need to hold that much capital and could give out more credit.

Last, there was strong opposition against a floor as it was seen as potentially making the AMA less attractive for large banks (Office of the Comptroller of the Currency, 2002). So, US regulators wanted to have no permanent floor in the agreement to increase flexibility of the approach.

These preferences either come from statements by regulator representatives during the negotiations or from testimonies where they had to explain their negotiation strategy. Hence, they are likely to reveal true preferences of regulators on the national stage. These preferences might very well be influenced by national lobbyists or by the general strive for deregulation at that time. A quantitative impact study (Basel Committee on Banking Supervision, 2003b) also revealed that G10 country banks would have to increase regulatory capital more than EU⁷¹ banks. As the G10 mostly consisted of EU countries, the US, and Japan, this probably means that US banks would be the ones that were hit harder by operational risk capital charges.⁷²

One additional point are the later 'revealed preferences' that US regulators simply ignored the indicator-based approaches in their implementation of Basel II. They only applied the AMA to their largest banks. The other banks remained subject to Basel I rules and could choose to opt-in (Federal Reserve Board, 2003). This was also seen as appropriate as US regulators (like Fed Vice Chairman Ferguson in his 2003 testimony before the US House of Representatives) saw their regulatory approach as superior and already risk-sensitive with regard to supervisory oversight.

This section shows that there were two camps regarding how to treat operational risk, pillar 1 and pillar 2, and neither was in position to impose its preferences on the other.⁷³ Evidence shows that mostly US but also UK authorities were on the pillar 2 side of an argument about how to

⁷¹ Back then, only 15 countries were members of the EU.

⁷² This study used the relatively predictable standardized approach and not the IMA.

⁷³ The two-camps claim is also supported in a testimony by the then-acting Comptroller of the Currency Julie Williams (2005).

regulate risk; the Eurozone was on the pillar 1 side. There might have been a slight advantage through agenda-setting on the side of European powers though. As we saw, much of CP-2 (and its pillar 1 focus) survived the discussions but the later deviations rather serve the pillar 2-side.

But before going into how this difference in positions might relate to the eventual emergence of a complex regime, it is important to also look at the industry's position – namely that of the Institute of International Finance (IIF) that might have played a role in how the final accord was shaped. This would be the alternative theory that is the counterfactual to my state-centric explanation that the preferences that I examined above are the crucial determinant of the complex negotiation outcome.

IV.10.4.3 Lobby position

The IIF (2001) response to operational risk treatment in CP-2 is of high relevance as it reveals the arguments of the most important lobby group and is especially interesting when looking at what is not in there: a fundamental refusal of the IMA, an explicit call for the AMA, and opposition to the floor concept.⁷⁴ The IIF established a whole working group – including some major players such as Deutsche Bank or Bank of America – to work on operational risk treatment. There are some crucial points in the IIF response to CP-2 that show important parts of their preferences. I will focus on the parts of the proposal that relate to what I have examined so far.

First, they wanted a more granular treatment of business lines in the standardized approach and a more complex (non-linear) formula for the BIA. Both ideas would have added to complexity of the eventual accord but were not included. Both less sophisticated approaches were left relatively untouched with regard to complexity throughout the consultation and extensive arguments by the IIF on the standardized approach did not influence the eventual outcome much.

The most detailed and elaborate work of the IIF with regard to the three initial approaches went into adjusting the IMA. The proposed changes culminated in more sensitivity to banks' risk management systems and other possibilities to change exposure to OR. Proposed measures to achieve that ranged from regular adjustments of the gamma factor over rewards for fulfilling

⁷⁴ This is of course an official document meant for publication and my research does not account for backroom lobbying aside from potential revelations in interviews. This is not a big problem, however, as one would expect lobbyists and big banks to mention goals they have in official documents, even if they do not reveal their preferences to full extent. Furthermore, there are clear statements by US regulators (see previous section) regarding particular aspects that were changed between CP-2 and CP-3 while the IIF remained silent on that. This does not rule out lobby influence in general but to a sufficient extent.

certain qualitative criteria to different sets of loss categories that could hit the bank. All this would have made the already complex IMA even more complicated and would have increased discretion on the side of regulators but would also have given banks more control over their regulatory burden. Both would mean increased complexity in the sense of my model. However, this was an effort to reform the existing approach and to make it a bit less pillar 1-like.

The result of this attempt was not a more complex IMA. In both CP-3 and the eventual accord the IMA was simply removed. It was replaced by the AMA, which is more far-reaching than a reform of the IMA and added more complexity than proposed by the IIF.

The IIF generally advocated for a fourth option that would make the IMA more granular and relied more on individual loss data but that was still a minimum capital requirements approach within pillar 1. One could still argue that this general idea came close to the AMA. Yet, the demand was very general and only directed at the more distant future. The focus of lobbying activity after CP-2 was on the other approaches.

The abolishment of IMA in favor of the AMA was not a demand by the IIF but rather one of states. This increase of complexity was probably not caused by international lobbying.⁷⁵

Furthermore, the floor for minimum capital requirements for OR to reduce room for maneuvering when using more sophisticated approaches – a simple tool to reduce complexity – was not contested at all or even mentioned in the IIF working group paper. Its removal in CP-3 seems unrelated to international lobbying activity – at least when refraining from potential backroom lobbying and *qui bono*-arguments. After the publication of CP-3, the IIF advocated for the AMA and against the “flawed” gross income indicators of the less sophisticated approaches (Institute of International Finance, 2003). Now, it seems reasonable to conclude that the IIF presented the most far-reaching proposals with regard to weakening the accord. Yet, the major changes had already happened at that point.

There is little reason why the IIF should have supported modest claims if its plan had been to seed chaos through complexity. As explained earlier, national regulators might be very close to their banking industry or even captured by lobbyists – even if they would certainly disagree with such claims – but this is not important for a model that looks at the international sphere. This is because

⁷⁵ As stated numerous times before, this does not apply to national lobbying that would simply influence the preferences of countries.

the model explains mechanisms of international regulatory harmonization based on diverging abstract preferences of states that can come from any source. An important assumption here is that there is not one (complex) regulatory preference pushed through, which would hint at concerted action and great lobby influence on the international stage. In this case, one can clearly identify diverging abstract preferences of states but not an agenda by the IIF or other international lobby organizations in Basel to increase complexity compared to what states want.

Altogether, the interventions by the IIF were certainly directed at reducing regulatory burdens for banks – also through increasing complexity – but their demands were rather within the boundaries of what regulators were proposing or did not make it into the accord.

IV.10.5 The solution mechanism

We have seen so far that the basic assumptions that are required for H1 are fulfilled for the case of capital requirements calculation for operational risk in Basel II. The complexity exhibited here as the relevant dependent variable is in line with my definition of complexity: the accord combines two approaches toward treating operational risk instead of one and opens avenues for regulatory divergence and flexibility.

I show that there were at least two camps in the Basel negotiations that did not have enough power to push through their preferred solution. The one camp is dominated by the newly created Eurozone, meaning major economies in continental Europe. In this research, this group is mostly represented by the European Central Bank. This is because the ECB is most transparent about its positions compared to other European and national agencies. The established players that also had formal voting power in the BCBS were the representatives of member states but their positions only occasionally surface, making a coherent analysis difficult. However, the ECB preferences are most likely influenced by that of major continental powers as they are its constituents. Thus, the ECB position seems to be a valid approximation of a ‘European’ one. However, it should be kept in mind that this position is only treated as a common one and national regulators and supervisors might have diverged from it.

The ECB supports the BCBS’ general approach to treat operational risk as a risk category that requires capital charges based on an indicator. This approach was not simplistic and already exhibited quite some complexity and flexibility – especially through the IMA. But that means that the ECB mostly preferred a pillar 1 capital requirements approach to operational risk.

On the other side was the United States (+ UK) with a strong preference for changing the regulatory approach towards a supervisory one (pillar 2). The US also was against a permanent floor to reduce potential advantages for more sophisticated approaches that could result in vastly reduced capital charges.

This divergence across regulators is important as the issue cannot simply be resolved through, for example, treating half of the risk under pillar 1 and half of it under pillar 2. Hence, another solution had to be found.

The preferences for changes revealed by US regulators exceed demands by the international banking lobby (at least the official ones). There is reason to assume that the banking lobby had influence on the level of regulatory capital envisaged as buffers. However, when it comes to changing the general approach, the demands seem relatively superficial and modest or did not become part of the changes in CP-3. When looking at the revealed preferences on the particular subject, states seem to be the dominant actors.

The eventual solution in the accord combined the preferences of US and EU regulators. It allowed for simple solutions for smaller banks that were indicator-based. It also allowed for highly sophisticated solutions where the bank itself would only be supervised while calculating its own risk buffers. This mix of approaches – in combination with an abolished floor – leaves much room for maneuvering both for banks and supervisors. Banks can move between approaches (they cannot go back to less sophisticated ones though) in order to optimize their internal cost-benefit analysis. Supervisors have leeway in how to treat banks within their jurisdiction. Thus, both players increased the room for regulatory outcomes to bring the accord closer to their preferred regulatory options but that came at the cost of making it more complex. That is the outcome the model would predict for when irreconcilable preferences of regulators clash.

Table 7 summarizes the positions of the relevant actors and how they culminated into a complex solution.

This means that both the assumptions of my model for the independent as well as the dependent variables are fulfilled and that potential biases or external factors such as international lobbying can be rejected. Yet, one might argue that this is just a collection of facts on what regulators have published over time and that the mechanism of the model remains blurry.

Fortunately, there is one smoking gun quote by John D. Hawke (Office of the Comptroller of the Currency, 2002) from a speech given to US bankers:

“In the interests of breaking the logjam, U.S. representatives to the Basel discussions on op risk have developed an alternative methodology that we intend to propose for inclusion in the next consultative paper. That methodology contains two key elements. First, we believe that an operational risk capital charge under the Advanced Measurement Approach should be based on a bank's own internal risk management system, subject to eligibility criteria and reasonableness checks that would be evaluated through the supervisory process.

Second, we believe that there should be no separate capital floor for op risk. Instead, our proposal calls for a temporary overall floor for both credit and operational risk based on the total amount of regulatory capital required under the current Accord — a floor amount that we believe should be phased out after two years.”

This is a clear statement that the AMA was a solution mechanism, which was supposed to reconcile preferences of national regulators.

The later abolishment of AMA might hint at a change in tolerance for the implied costs after the financial crisis but evidence is not sufficient to assess the decision-making with regard to that. Hence, neither the intertemporal nor the social planner component of the model are tested here.

IV.10.6 Conclusion: Complexity as a solution mechanism

The discussion on regulatory treatment of operational risk evolved over time beginning with a general acknowledgement that this kind of risk existed and should be addressed and ending with a highly complex system that was only implemented partially (and thus exhibiting both ex ante and ex post complexity). Much of the complexity emerged during the negotiations; most importantly an indicator-based approach to calculate capital charges for OR was replaced by a mix of indicator-based, less sophisticated approaches and an internal approach that essentially sets supervisory rules for banks' operational risk management instead of prescribing capital charges. This certainly is a very complex solution in the sense of the model and we have seen that this complexity was potentially costly.

The industry was invited to contribute to the package and some weakening of stringency of regulatory requirements can easily be attributed to that. However, this only applied to some areas (such as the general amount of OR capital charge that should be held). Central points that were changed in the course of the Basel II negotiations are based on states' preferences. Especially US regulators were vocal about their diverging preferences from what the BCBS had proposed while the continental European players seemingly were more supportive. The conflict was resolved through the described complex structure.

Therefore, the case of operational risk treatment in Basel II supports hypothesis H1 by showing that a clearly complex solution was the result of incompatible preferences of at least two blocs that could not impose their preferences on each other. Yet, they still decided to agree on some regulatory harmonization that served both parties' preferences to some extent. The US-UK side could introduce the AMA that moved regulation for larger banks (and all banks that fell under Basel II in the US) to a more supervisory approach that leaves flexibility. The EU still had the simpler approaches in the final accord. This is a departure from the initial proposal that was closer to the EU (without the UK) approach and widened the potential capital requirements that are applied to one and the same bank under Basel II. This is the basic solution mechanism for diverging preferences described by the model.

The alternative explanation that lobbyists played a decisive role in the negotiations cannot be supported – at least based on publicly available information from the international stage. The preferences of lobbyists apparently were very well within the boundaries of state preferences. Of course, the latter has to be taken with a grain of salt. Lobbyists do not operate openly and there might very well have been background meddling by the IIF or others. However, this would be speculation compared to openly expressed preferences by states that were translated into more complex rules.

In some sort of epilogue, the high costs of the complex solution were eventually recognized after the Financial Crisis when the regulatory framework was substantially reformed and simplified and especially the innovations that made it complex were abolished – most notably the AMA. This might result from a change of preferences on the pillar 2 side or could – in line with the model – be the result of a new assessment regarding how complex solutions can get before costs exceed benefits.

This case has no real social planner or intertemporal component (hypothesis H2 and H3) but supports the central prediction of the model (H1) that complexity is a solution mechanism to diverging preferences among roughly equal states. The next case on European banking regulation will go into the social planner-hypothesis.

Table 7: Operational risk preferences and regulatory proposals between CP-2 and CP-3

Selected regulatory issue in Basel II	BCBS proposal (CP-2)	Cumulated Eurozone position	US (UK) position	Lobby position (IIF)	Resolution: CP-3 or Accord	Ex post deviation
Calculation of OR capital requirements (simple)	Capital requirements based on gross income (either total (BIA) or over 8 business lines (standardized)) Goal: 20% of Basel I capital requirements as OR requirement (→ Pillar 1). No (BIA) or limited back-office requirements.	Might be too high compared to IMA (competitive disadvantage for smaller banks). Little incentive to reduce OR → stronger supervisory part. Supportive of CP-2 in general.	Pillar 1 capital charges not flexible enough. No incentive effects. Prefer pillar 2 treatment → strict supervision of banks' precautions against operational losses.	Capital charges too high and should not be linear. More categories for business line in standardized approach. General desire to downscale requirements.	Lower goals for capital charges (12% of Basel I charges on average). Alternative standardized approach but still eight business lines.	No implementation of this approach in US.

Selected regulatory issue in Basel II (cont'd)	BCBS proposal (CP-2)	Cumulated Eurozone position	US (UK) position	Lobby position (IIF)	Resolution: CP-3 or Accord	Ex post deviation
<p>Calculation of OR capital requirements (sophisticated)</p>	<p>Internal Measurements Approach (IMA): Mix of internal data as indicator and regulatory influence through multiplying factor (γ) High back-office requirements.</p>	<p>General support. Should not be too beneficial compared to less sophisticated approaches.</p>	<p>Preference for a more sophisticated approach purely based on internal modelling.</p>	<p>More influence for banks on IMA. Vague suggestion of a fourth option that is closer to internal modelling.</p>	<p>IMA abolished; Advanced Measurements Approach (AMA) introduced: Collection of requirements and supervisory practices that would allow banks to set their own OR capital charges → switch to supervision approach.</p>	<p>Only applied to 10 internationally active banks (+opt-ins) in US.</p>
<p>Floor on capital requirements</p>	<p>CP-2: Permanent floor, unspecified. Working paper on CP-2: 75% of standardized approach for AMA.</p>	<p>General support.</p>	<p>Against.</p>	<p>No position</p>	<p>Only temporary floor, voluntary floor after implementation period.</p>	

IV.11 Case II: The transposition of Basel III reforms into European law in CRD IV/CRR

The implementation of the international Basel III regulation, which was the immediate answer to the Financial Crisis, in Europe makes for another good case study that allows for a wider perspective. The Capital Requirements Directive IV (CRD IV) and the Capital Requirements Regulation (CRR) were the two important pieces of legislation at the EU level that introduced the new standard to the European regulatory area. Aside from obvious divergences in member states' banking systems and preferences, the process of how this was done makes for a good case because of several reasons:

First, the topic is more holistic than case I that had a very narrow focus on operational risk. Thus, the CRD IV/CRR case paints a broader picture of the regulatory process. The model aims to explain general developments (as the criticisms of complexity usually also refer to entire frameworks and, thus, it would be odd to only examine cases that are narrowly defined yet clear-cut examples of the behavior described by the model. Such a larger scope might help to further support hypothesis H1, that complexity is a solution mechanism for diverging national preferences.

Second, the Basel III framework is a baseline that one can roughly compare to regulatory decisions such that in some cases deviations might become visible that would not be showing up in examinations of the original Basel III accords. One of these examples would be France's fight against strict rules for bank-insurer conglomerates when it comes to capital treatment.

Third, compared to the Basel II case, the transposition of Basel III is more recent and has more direct relevance for current developments, such that interview partners often referred to the implementation of Basel III. This informed my analysis.

Last and most importantly, the social planner perspective (hypothesis H2) can be examined in this case as the European Commission, and other European bodies play an important and even dominant role in this field. As argued before, they come closest to the social planner modelled in section III.2.3.1 even though they are still political entities. This will contribute to checking the validity of the model in more regards than the previous case that only focused on the general mechanism (H1).

This social planner perspective argues that an entity that looks at the sum of all its constituents and optimizes regulation (and discretion) for them would come up with complex solutions as long as the constituents' preferences differ. The mathematical model in chapter III argues with two constituents with the same weight but this can be extended to more countries and biases (both justified and random) that would make the social planner less 'social'. In the world of banking regulation, the European setting probably comes closest to such an environment.

While the case of the CRD IV package is promising in all these ways, its scope and setting come at a cost. While broader, the case is also less specific and allows for less attention to details of regulation. Furthermore, the negotiations are institutionalized and often happen behind closed doors (especially in the European Trilogue) without always providing official papers that account for the state of the negotiation. This means that some data has to come from newspaper articles or has to be extrapolated from official documents. Fortunately, I can build on previous work by Howarth & Quaglia (2016a) to estimate positions of member states in these negotiations.

The case finds compelling support for both H1 and H2. The European bodies, especially the Commission, were keen on harmonizing regulation – which would mean little complexity in the model – but already left some discretion in their proposals to account for differences in European banking systems and state preferences. Instead of going for a non-complex approach, they opted for one with limited complexity and particularly the ECB argued for more upward discretion that the Commission tried to reduce. Room for maneuvering, complexity in the sense of the model, then got much bigger in the course of the negotiations among states. One can, once again, observe a divergence between a coalition led by the United Kingdom and a majority of continental European countries. Yet, the large scope of this investigation also reveals some cases in which some sort of complexity emerged but cannot be explained by the model and, thus, reveals some limits to this approach.

IV.11.1 The new European banking regulation framework

While Basel II was still implemented in the late 2000s, the Financial Crisis struck and required a general overhaul of international regulation. In the crisis, banks on both sides of the Atlantic faced major losses through non-performing assets. The underlying idea of capital regulation is to require banks to set aside enough safe assets to pay for such losses. However, a number of banks were undercapitalized, which meant that their capital buffers were not large enough to cover these losses, and not all of them were saved by their governments – most famously Lehman

Brothers. The resulting loss in confidence in banks all over the world led to the well-known liquidity-crunch for banks such that many of them faced a similar fate even with high capital reserves. The political environment and probably also new assessments of the costs of crises made major revisions necessary both to capital and liquidity requirements.

In the international arena, this was done through a quick but extensive overhaul of the Basel framework: Basel III (Basel Committee on Banking Supervision, 2010a, 2010b, 2011). As explained before, this framework became more complex and more extensive in many fields than the already complex Basel II accord. It increased regulatory standards, fostered transparency, introduced extra safeguards – for example regarding liquidity of banks – and addressed procyclical effects of earlier regulations, which also aggravated the Financial Crisis. The first pillar that originally only included the capital buffers that were meant to ensure solvency was transformed into a multi-layer firewall that also addressed the other potential problems of a bank if a crisis occurred such as reduced access to short-term credit.

When I refer to Basel III here, I mean the reforms directly after the Financial Crisis until 2013 and their implementation. There were reforms or extensions to the framework later (the terms completion of Basel III, Basel 3.1, or Basel IV all refer to this) that I will ignore here.

The negotiation process of this Basel III framework would make an excellent case – just as the Basel II negotiations covered in the last case – but I want to focus on how it was implemented in the European Union. The case of Basel II operational risk treatment was an in-depth case for how international regulatory negotiations can yield complex, ambivalent results that seem costly but also satisfy preferences of negotiating powers. This case takes place in the European arena based on the previously agreed Basel III framework which is then transposed into European Union law.⁷⁶ This allows for a different perspective on the matter in multiple regards:

- The Basel III framework provides a backdrop against which one can compare the implementation within the EU. It is especially relevant where the EU deviates from the accord or where it exerts discretion that is part of Basel III.
- The European Commission, the European Parliament (EP), and the ECB are powerful bodies that govern the whole EU and come close to a social (or rather central) planner as

⁷⁶ The institutional setting of the EU is explained in section IV.7.

modelled in section III.2.3.1. They are important actors that set agendas and make proposals. This stands in contrast to the rather facilitating role of the BIS.⁷⁷

- Especially the Commission and the Parliament are highly political entities and subject to much mingling by member states. For example, the Commissioner in charge of implementing the Basel III framework in the EU, France's Michel Barnier, was accused by the UK of providing preferential treatment to continental members states at the cost of the City of London (Barker, 2011). However, they are still entities whose task is to regulate the entire European Union and where every member state has some influence. This brings them closest to the social planner of the model, who can very well be biased towards some of their 'subjects' but still take their needs into account somehow. This is discussed further in the respective part of the case below.
- Additionally, one has to keep in mind that particularly the Commission is also part of the power play in the EU and that it certainly often prefers to centralize powers in Brussels. Where own interests of the Commission come at play, I will mention that.
- Complementary to the European rule makers, the member states (MS) play a crucial role both as rule-makers in the EU through the Council and as rule-takers that implement EU directives or apply EU regulations (see, for example, Christopoulos & Quaglia, 2009). Their position fits well into the model.
- The case is more holistic than the other two broader cases investigated here as it looks at the transposition of a whole accord. Despite focusing on some particular areas of this accord and its transposition (going through all areas would take multiple books), it still can give an idea about how Basel III was discussed in general. This stands in contrast to the very specific and detailed discussion of case I.

The European arena represents a welcome opportunity to peak into actual rulemaking of a community of states that must come up with a common regulatory framework but have different prerequisites. A prime example for that is the well-known difference between the French and the German banking systems as well as the UK, which has a very different tradition.⁷⁸

⁷⁷ This role is, for example, stated in the charter of the Basel Committee (Basel Committee on Banking Supervision, 2018; current version)

⁷⁸ Howarth & Quaglia (2016a) estimated the position of these three actors, which I will cover later when looking at national positions.

The important role of entities that could be regarded as some sort of central planners in the EU, makes this a case that cannot only evaluate hypothesis H1 but also H2. While H1 refers to the basic concept of complexity as a solution mechanism, H2 and the respective part of the model refer to the behavior of a social planner. If preferences of regulated subjects diverge, the theory predicts that not only they themselves would come up with complex regimes but that a central planner concerned with the preferences of all subjects would also introduce some complexity (not necessarily the same amount though).

Thus, the additional great questions that this case study is supposed to answer are how the views and proposals of the Commission, the EP, and the ECB compare to proposals and rules agreed by the member states and in Basel III? How was the Commission's proposal for CRD IV/CRR altered in the negotiation process? Was there a switch from directives to regulations for coherence reasons?

IV.11.2 Timeline and basic setting

The Financial Crisis mainly took place in the years 2007/2008 into 2009, which fell into the Basel II implementation period. It started in the US but stretched across the globe; a truly international crisis that was supposed to be prevented by the Basel framework. The banking crisis itself as well as the following economic crisis stretched public finances especially in the Eurozone and later led to a European debt crisis.

In an immediate reaction to the crisis, the EU extended its 2006 Capital Requirements Directive (CRD) with two new directives CRD 2 and CRD 3 in 2009 and 2010. But the greater overhaul of the old CRD, which implemented Basel II, came in 2013 with the CRD IV/CRR, which for the first time not only worked as a Directive but also in parts as a Regulation. This means that the EU rules apply directly and are not transposed into national law before becoming binding for economic subjects. One regulator (Interview_Regulator#22_2020) saw this as a major step toward reducing arbitrage opportunities through ex post deviations from common rules. However, parts of this package still had to be transposed into national laws as they were in the Directive. This regulatory package was the main tool to implement the new Basel III accord.

Thus, the core of this case study is the time between the publication of Basel III in 2010/11 and the publication of the CRD IV/CRR in 2013. The prologue are the CRDs 2 and 3 as well as the Basel framework, the implementation by MS is the epilogue to the case. Many fields that were

mentioned in Basel III had long implementation periods and were only clarified over time, which is why some fields – such as liquidity requirements – were not entirely regulated by the CRD IV/CRR package but later. This case is only about this package and what was agreed then.

Within the EU legislative process, the timeline starts with a proposal of the Commission that is then discussed by the European Parliament and the Council of the European Union, which consists of member states. They make proposals for changes and other European bodies, such as the ECB, comment on the proposal. The final legislative package is then determined in a Trilogue of the Commission, the EP, and the Council where they find a compromise. States are part of the whole process, their most important institutionalized influence is exerted through the Council while the other two entities are more supranational. Furthermore, the Commission can be entrusted with the power to introduce delegated acts on particular subjects, which are laws that do not need approval of the other actors (they can block them though).

Hypothesis H1 of the model, the general idea that complexity is a solution mechanism, refers to the part when states have to form an opinion in the Council. Hypothesis H2 on a social planner being willing to include complexity as well refers to the behavior of the Commission and, to a limited extent, the EP and the ECB.

IV.11.3 The starting point: Basel III

The Basel III framework had several important features that I briefly summarize in the following to provide a baseline of what was then included in the CRD IV/CRR. The Basel III process was ever evolving and new standards were agreed subsequently, most prominently the overhaul that included an output floor in 2017 (Basel Committee on Banking Supervision, 2017a), but that agreement did not directly inform the CRD IV/CRR that was published in 2013. Thus, this – incomplete – list is mostly about the capital and liquidity measures included in the accord of 2010/2011.⁷⁹ Broadly speaking, capital requirements are precautions against insolvency of a bank in case of losses while liquidity requirements are supposed to ensure the survival of a solvent bank if refinancing opportunities dry up as happened in 2008. Both precautions are costly to banks and limit their ability to give out loans as this restricts the flexibility of banks to refinance themselves. Own funds that count as regulatory capital are more expensive (as they are riskier for investors) than deposits. Refinancing investments through long run measures to ensure liquidity

⁷⁹ There also is a more recent and more detailed version of the liquidity standards from 2013 (Basel Committee on Banking Supervision, 2013), which I will take into account when appropriate.

is likely to be more costly than raising ever-new debt in the short run or through debt instruments with a short maturity. Both fields are generally interesting for this investigation as they affect the performance of a banking sector and might result in deep consequences for it. However, liquidity requirements were still under negotiation in Basel while the EU started implementing Basel III. Thus, liquidity can only be partially integrated to an investigation of the CRD IV/CRR package.

Unless indicated otherwise, this part is based on the agreement on Basel III (Basel Committee on Banking Supervision, 2010a).

With regard to capital, the new accord covered two sides of the same coin: what are eligible parts of the capital base and how big this capital base has to be to safeguard against potential losses (this includes provisions on how to determine the required capital base). These capital measures were much extended compared to Basel II. The most important changes were as follows:

1. The definition of eligible capital was narrowed and the general quality of regulatory capital was increased.
 - a. This means that more capital must consist of readily available equity (common stocks), retained earnings, and also subordinated issued papers with seniority/guarantee and that cannot be easily withdrawn.⁸⁰
 - i. This Tier 1 capital must cover at least 6% of the risk-weighted capital (RWC) and the highest quality stocks/earnings alone must be at least 4.5% (Common Equity Tier 1 – CET 1).
 - ii. The rest of the unchanged 8% general capital base, the Tier 2 capital, enjoys slightly less restrictive conditions.
2. Countercyclical buffers were introduced to address the pro-cyclical effects of capital regulation. These measures increase regulatory capital compared to earlier accords.⁸¹
 - a. Conservation buffers automatically add CET 1 capital through retained earnings to the existing capital precautions until 2.5% of RWC are reached. The eventual highest-quality buffer would thus be 7% of risk-weighted capital. This automatic buffer allows banks to face modest losses without their core capital falling below the capital-base threshold.

⁸⁰ This stands in contrast to previous provisions, which were more flexible and allowed for a larger share of the lower-quality Tier 2 capital (or even lower qualities) to be used as capital base 2%+2% Tier 1 and 4% Tier 2).

⁸¹ One additional important part was improved risk-coverage for counterparty risks and regarding credit ratings and cliff effects was part of the package. This part will not be covered in detail.

- b. Countercyclical buffers are discretionary and domestic authorities will set them at between 0% and 2.5% of risk-weighted capital based on the economic environment.
3. The leverage ratio insures against mistakes/arbitrage in the risk-weighting that underpins all capital base measures: the leverage ratio refers to an exposure of the bank that is not subject to (potentially internal) risk-weighting but a prescribed method to measure banks' risk exposures. This exposure must be underpinned with 3% CET 1 capital. This brings the capital requirement calculation closer to the initial Basel I method of prescribing risk-weights. However, this leverage ratio was outlined but *not* introduced in Basel III – it was supposed to be introduced later after an observation period until 2017 with some reporting requirements on leverage before that.⁸²

In addition to the capital requirements, Basel III liquidity measures were supposed to ensure banks' ability to keep operating under stress even if external liquidity provision dries up as happened in the Financial Crisis. These liquidity measures complement principles for liquidity risk management that were issued during the Financial Crisis (Basel Committee on Banking Supervision, 2008).

- The Liquidity Coverage Ratio (LCR) refers to the short term and is based on a (centrally designed) stress-test that a bank has to pass. This means that in a simulation of certain types of stress (e.g., haircuts of assets, downgrade of the bank by rating agencies), the bank has to survive for 30 days.
- The Net Stable Funding Ratio (NSFR) refers to the medium term and predefined liquidity measures for assets and funding. It is supposed to ensure that an asset of a bank is refinanced by similarly liquid means. This means that short term borrowing should not be the main source for financing a long-term-credit that cannot be recalled on short notice.

Both these liquidity measures were inspired by existing business practices but subject to much deliberation in the aftermath. They were explicitly subject to an observation and evaluation period and were supposed to be introduced later while taking the results from such a test period into account (Basel Committee on Banking Supervision, 2010c). This was also done through an assessment (Basel Committee on Banking Supervision, 2013) only published while the CRD IV package was already negotiated such that these EU negotiations were rather about the monitoring

⁸² Some European governments apparently were the ones pushing against a leverage ratio (The Economist, 2014).

and the preparation of introducing LCR and NSFR. Thus, as explained before, the focus of this investigation will be on capital measures and how they were implemented in the EU.

This Basel III package serves as a baseline for the discussion surrounding the CRD IV/CRR regulatory package. I take the agreements from Basel as given, even though they certainly were subject to negotiations and might also exhibit complexity-based solutions.⁸³

The central criterion for what to cover here is what of the Basel transposition into European law was explicitly contested among member states as outlined in a document by the Council (Council of the European Union, 2011). This streamlines this investigation to a few sub-cases and makes it comprehensible and manageable as a case study. The upside to this is that one crucial assumption of the model is fulfilled: preferences of states diverge. One caveat is that this reference to official disagreements leaves out most informal negotiations⁸⁴ and also points that might have already been resolved in Basel before moving things to Brussels. However, the danger here is only to miss developments that could further support the model but there is little reason to assume that this would result in false confirmations of mechanisms that are not there.

In the following, I will first go through the positions of the EU's central policymaking bodies both to set the stage for states' responses and to evaluate hypothesis H2 for the first time, which states that also central planners would introduce complexity – meaning that complexity in general is not necessarily bad. Second, I will move to the negotiation stage of the Trilogue between the Council and the two central planners. Here, both H1 and H2 can be tested again.

⁸³ Most notably, the widely criticized internal ratings-based models approach for calculating regulatory capital is something that is very likely to be part of a similar solution mechanism as discussed here. However, this would make a different case.

⁸⁴ For example, the initial proposal by the Commission, which resulted in the Council document on contested issues, might already be influenced by countries,

Table 8: Summary of positions of actors in the European CRD IV/CRR process (selection). The respective positions and more detailed explanations and citations can be found in the sub-cases of case II.

	Definition and Quality of Capital	Prudential Requirements / Capital Buffers	Leverage Ratio
Basel III compromise	<p>Increase in quality of the capital base and a narrower definition of eligible capital:</p> <p>Introduction of CET1 as safest category (4.5% risk-weighted capital requirement (RWCR)). Higher quotas for Tier 1 capital in RWCR.</p>	<p>Introduction of mandatory and discretionary buffers:</p> <ol style="list-style-type: none"> 1. Conservation buffers: up to 2.5 % additional CET1 capital based on RWC automatically collected through retained earnings. 2. Countercyclical buffers: Set by supervisors between 0% and 2.5% of RWC 	<p>Fixed ratio of 3% CET1 capital based on non-weighted risk-exposure of a bank: safeguard against mistakes/arbitrage in the risk-weighting process.</p> <p>No clear recommendation to implement a leverage ratio but an observation and monitoring period until 2017.</p>
Commission proposal	<p>General transposition of rules but important deviation from Basel III in terms of definition of CET1 capital.</p> <p>Much broader eligibility criteria for what constitutes highest-class CET1 capital (Basel III is designed for large banks, the Commission adjusted rules to other business models).</p>	<p>Close transposition of the rules throughout Europe. Focus on coherence and little discretion for national regulators to introduce weaker/ stricter requirements.</p> <p>National regulators had discretion in setting countercyclical buffers.</p> <p>All other adjustments: European bodies, mostly the Commission itself → centralization.</p>	<p>The Commission made use of the long implementation periods and only included preparatory work.</p> <p>Leverage ratios were supposed to be published by 2015, which might have resulted in market control.</p> <p>National regulators were free to set leverage ratios themselves.</p>
Position of the EP (reaction to Commission)	<p>More exceptions (e.g., for savings banks) and longer implementation periods. Details supposed to be outlined by EBA → less power for Commission.</p>	<p>Less centralization through limits on adjustment power of the Commission.</p> <p>Limited scope of application of countercyclical risk buffers (only for systemic risk).</p>	<p>General opposition to non-risk-sensitive leverage ratio.</p> <p>Disclosure of existing leverage ratios only upon initiative by the Council and the Parliament.</p>
Position of the ECB (reaction to Commission)	<p>The CET1 definition should be refined and adjusted to European markets by technical authorities (EBA and</p>	<p>Strong criticism vis-à-vis the proposal to harmonize prudential regulation entirely.</p>	<p>Quick, binding, and complete implementation of the leverage ratio.</p>

	Definition and Quality of Capital	Prudential Requirements / Capital Buffers	Leverage Ratio
ECB (cont'd)	NCAs) but the general discretion to define capital as CET1 capital should be controlled by the EBA through technical standards.	Proposal to allow for more upward discretion such that national supervisors can impose stricter requirements (incl. buffers).	
Conflicts with and among member states	<p>States wanted more flexibility in the definition of CET1 capital.</p> <p>Some states (UK) wanted more discretion in treating investments into insurance companies (themselves subject to capital requirements), others wanted harmonization.</p>	<p>Some states (mostly UK + northern) wanted discretion in introducing more prudent measures and buffers → against maximum harmonization. Some states were for maximum harmonization.</p> <p>There was a general strive to increase power for member states to change prudential requirements.</p>	<p>Publication requirements from 2015 onward were contested among states.</p> <p>Disagreement across states whether there should be an automatic implementation.</p>
Final rule (CRD IV/CRR after Trilogue between Council, Commission, and Parliament)	<p>National supervisors could define CET1 capital under their respective national settings (general technical standards applied)</p> <p>Limited discretion in treating investments into insurance companies.</p>	Strong upward discretion for national prudential requirements (see Figure 10)	<p>No great divergence from Commission proposal.</p> <p>Publication requirement out.</p>

IV.11.4 The central planners (H2)

IV.11.4.1 European Commission

By 2011 the European Commission had translated the Basel III agreement into a proposal for binding rules for the European domestic market. For the first time, these rules were partially introduced through a Regulation instead of a Directive. Most points from Basel III that are mentioned above were part of the proposed Capital Requirements Regulation (CRR; European Commission, 2011b), the proposed Capital Requirements Directive IV (CRD IV; European Commission, 2011a) introduced rules concerning the new countercyclical capital buffers as well as supervisory issues such as sanctions and the reliance on external ratings. Together, these legislative proposals formed a package that was negotiated on the European stage. The package especially meant to create a single rulebook for the European banking market and coherence of rules across Europe was explicitly stated as a goal.

The underlying question with regard to the model is how the Commission as a central planner reacts to divergences in national banking markets. Does it introduce a unified set of rules that applies everywhere to achieve the goal of coherence? Does it already introduce leeway for states?

The model (H2) predicts that a central planner would accommodate to the divergences in its constituents by introducing discretion up to a point where it becomes too costly (this point can lie above or below the solution found by states but would probably end up below the constituents' solution). If we accept the social planner role of European institutions, an introduction of complexity in their proposals instead of a simple, unified set of rules would support the claim that complexity can be beneficial. This applies to occasions where the institution introduces leeway and discretion as well as opting for national pillar 2 supervisory provisions instead of pillar 1 or European supervisory arrangements.⁸⁵

The first proposal by the Commission largely built on a maximum harmonization approach. It leaves almost no discretion to countries on how to implement hard capital requirements (pillar 1 of Basel), which means reduced complexity in terms of the model. This does not necessarily mean that the Commission only had cost-reductions due to less complexity in mind when proposing

⁸⁵ This does not mean that all pillar 2 measures increase complexity. But moving a hard-law pillar 1 requirement to pillar 2 and the discretion of member states is an increase in complexity through more discretionary power for states.

this. It is clear that the dynamic nature of banking markets makes some flexibility necessary and the Commission wanted to be the one that applied this flexibility through delegated acts (see Art. 443 in the Commission proposal (European Commission, 2011b)). This tool enables the Commission to change prudential requirements unilaterally as long as the legislative bodies of the EU, especially the Council, do not object. This provision was changed later by the Parliament and especially by the Council, which could be interpreted as a power struggle between the branches of EU administration. Hence, this requires more detailed examination.

I will first outline and evaluate the initial proposal by the Commission with regard to how much it diverges from the pre-agreed Basel III standards⁸⁶ and where the Commission makes use of potential discretions in the Basel-agreement. The focus here is based on backward induction and feasibility: I look at what was contested in the Council later and start following the process of how these specific rules were negotiated here. The three broad topics are harmonization of risk buffers, definition of own funds, and the leverage ratio. Other topics such as liquidity requirements are briefly covered but the focus lies on the former three. After that, I will take the commission proposal as the basis for evaluating the positions of other European authorities and the member states/the Council.

Main basis for all these evaluations are negotiation documents and proposals of the respective actors. This is complemented with other available sources such as newspaper articles, previous research, and some results from interviews with stakeholders in European banking regulation.

IV.11.4.1.1 New capital buffers / prudential capital requirements

The explicit goal of the Commission was to create a level-playing field for banks in Europe, which means only limited regulatory divergence across EU countries (European Commission, 2011a, 2011b). Strikingly, this also means that countries were not supposed to diverge 'upwards' from the common rules – which is in line with a potentially unintuitive claim of the model. The CRR proposal states: "Inappropriate and uncoordinated stricter requirements in individual Member States might result in shifting the underlying exposures and risks to the shadow banking sector or from one EU Member State to another" (European Commission, 2011b, p. 10). This means that in this case, contrary to the model, the Commission as a social planner-like entity wants to

⁸⁶ This is an imperfect baseline. As previously discussed, European authorities and some member states are present in the Basel Committee. As seen in case I, Basel can already exhibit substantial complexity. However, even further divergence from this baseline would be a strong indicator that the Commission saw a need to adjust rules to European markets.

eradicate divergent rules across the EU. This is an even stricter (and less complex) transposition of Basel III rules as they are minimum standards and would allow for upward discretion.

The proposal only left very limited pillar 1 leeway to states to increase regulatory requirements in the Directive proposal (European Commission, 2011a). This leeway was mostly based on the countercyclical capital buffers whose scope for discretion is also limited but leaves some room for stricter rules as the respective competent authorities could decide whether it was time for building up countercyclical buffers of up to 2.5%.⁸⁷ They could also use their pillar 2 supervisory powers for stricter requirements in general, but this remains limited in scope. The more binding pillar 1 decisions would have been made by EU agencies for the entire EU.

IV.11.4.1.2 Leverage ratio

The Commission was more open to a less coherent approach with regard to the leverage ratio in the CRR. The Commission wanted to give supervisors the discretion to apply a leverage ratio in line with Basel III but generally rather refers to this as a monitoring and implementation period with few hard ratios and rules (see, for example, European Commission, 2011b, p. 14).

This is in line with the Basel III agreement and the Commission is simply making use of this ex ante discretion from Basel III. The Commission wanted to give supervisors the opportunity to adjust their regulatory burdens to the respective circumstances. As the Commission was responsible for the European banking market, this can be easily explained by European banks not meeting the leverage ratios based on what the Basel Committee had proposed: in June, roughly 75% of Europe's big banks would not have had enough capital to match the 3% leverage ratio (The Economist, 2014). Introducing such a leverage ratio prematurely or for struggling banks could have had negative effects on the EU's economy as banks would have needed to focus on building such ratios, resulting in a shortage of credit for the economy – a credit crunch. A social planner responsible for the European Union would try to avoid a credit crunch that might result from imposing such strict requirements on its highly leveraged banks.

One point, however, would later be contested by member states: the Commission wanted banks to publicize leverage ratios from 2015 onwards (European Commission, 2011b, p. 14). This would have had a harmonized disciplinary effect on banks and supervisors through markets as especially weaker, more leveraged banks would face higher funding costs. Markets would anticipate that

⁸⁷ The authority competent for that depends on the importance of the bank and the participation of the respective country in the banking union.

they might struggle to fulfil the ratio later and might be less willing to fund the respective bank. This way, publication requirements might have been a 'soft' push towards meeting the leverage ratio before it becomes law.

Altogether, such a very slow and restrained approach towards the leverage ratio seems like a solution to the problems of various EU banking markets. The leverage ratio was supposed to reduce complexity and safeguard against mistakes that might occur when implementing the more sophisticated, complex arrangements of Basel III. Delaying such a measure simply allows for such mistakes or deliberate arbitrage for longer. This way, it could be seen as 'increasing' complexity vis-à-vis a baseline scenario with an implementation of the leverage ratio together with other measures. However, this is not a striking case where rules were watered down decisively by the Commission.

IV.11.4.1.3 Definition of capital/own funds

One area where the Commission clearly deviated from the Basel compromise was the definition of capital. Here, we see a clear increase in complexity in the sense of the model compared to the baseline set by Basel.

The stricter and more narrow definition of highest-class equity capital (CET1) in Basel III as common stocks was simply not compatible with the diverse EU banking market. What was called common equity as the centerpiece of Tier 1 capital, was not easy to define in EU law as the Basel III-framework was designed for big, international banks while the CRD IV/CRR package applied to all banks in the EU. According to the Commission this required a broader definition of own funds to accommodate to the diversity of European banking markets (see European Commission, 2011b, p. 20).⁸⁸ For example, cooperative banks needed a special definition of core capital as their legal basis was different from that of, for example, a publicly listed firm whose stocks issuance would determine this part of the capital base. Thus, some banks needed different rules for their regulatory capital base than others and the Commission proposal provided for that. This seems reasonable as one could not expect the Commission to advocate for cooperative banks to

⁸⁸ The counterparty-risk provisions of Basel III were explicitly changed in the CRR to come closer to existing practices in the EU (European Commission, 2011b, p. 13). This roughly refers to the risk of default by counterparties in a derivative-trade, which makes it a risk that lies somewhere between credit risk (which refers to default risks) and market risk, which makes special arrangements necessary. However, it is difficult to see how this issue refers to complexity in the sense of my model and simple divergence from the agreed Basel III text would not add information to my empirical exercise if I cannot pin it down to increased complexity. Hence, this is only mentioned here as one further occasion where the Commission adjusted rules to accommodate to differences in domestic circumstances. I will not cover these provisions further.

transform into publicly listed firms to meet regulatory requirements. Yet, it is a departure from joint rules agreed in Basel.

That such divergence from agreed narrow capital rules and the resulting greater complexity was seen as problematic shows a report by the BIS on the implementation of Basel III. It criticized the European transposition of the rules as “Materially Non-Compliant” with Basel III (Basel Committee on Banking Supervision, 2012, p. 12). This referred to a later version that already included changes by member states and the Parliament but this criticism also applied to the Commission proposal.

The Commission approach represents increased complexity in the sense of the model and hypothesis H2. The material differences in European banking markets led the Commission toward proposing more lenient rules than agreed in Basel. Banks that only differ in their respective organizational form can face different regulatory requirements. Whether this divergence is costly or not is difficult to say but the criticism by the BIS at least hints at some expected costs.

IV.11.4.1.4 Liquidity provisions

During the Financial Crisis, liquidity of banks was a major concern, which is why this was addressed prominently in Basel III. But this was a new measure and subject to an implementation and revision period from the start (see above). This means that the struggle about the liquidity measure was to be delayed from the start. Hence, in this investigation, this is only about how this implementation would be organized and not the measures themselves. The Commission proposed that it would introduce the Liquidity Coverage Ratio through a delegated act (Art. 401/444 of the CRR proposal (European Commission, 2011b)). The Net Stable Funding Ratio was to be implemented by 2018 only. It was mentioned as a future project in the preface of the final regulation and some reporting requirements were introduced (Regulation 575/2013/EU (CRR), 2013). Hence, the subject of liquidity is something that would be covered in an assessment of later regulatory moves (e.g., the second Capital Requirements Regulation or the delegated act introducing the LCR).

IV.11.4.1.5 Summary

The 2011 proposal by the Commission for the capital package exhibits a number of topics where the Commission as a central planner for the whole Eurozone introduced discretion especially compared to the original Basel III rules. Most importantly in the areas of definition of own

funds/capital base and leverage ratios, the Commission allowed for different and potentially lenient regulatory treatment of banks – to a limited extent. This supports claims from the model (hypothesis H2) that a central planner would introduce complexity to help its constituents and, thus, that such complexity would be welfare-enhancing compared to simpler, more harmonized approaches.

On the other hand, the Commission was striving for harmonization and a reduction in discretionary choices for member states in many of the same fields and in general. It tried to find a balance between harmonization and flexibility but with a strong bias towards harmonization, which also shows in the fact that most rules were part of the CRR, which applied directly to EU banks, instead of the CRD IV.⁸⁹

This starting point of the regulatory process shows how the Commission tried to reduce complexity in general but also left room for discretion where it was important for the respective national banking markets, which is in line with the role of the model's social planner in case they see high costs from complexity but also some benefits.

In the following, I will briefly discuss changes by other European planners, the European Parliament and the ECB. After that, I trace the process towards the eventual regulation when member states officially joined the process in the negotiations in the Council. Of course, national governments already play into Basel and also Commission rulemaking but this procedure is their institutionalized chance to change the regulation.

IV.11.4.2 European Parliament

The European Parliament added its comments after its deliberations in June 2012 (European Parliament, 2012). With regard to the topics that I have covered so far, one can see a desire to foster harmonization and to reduce potential negative impacts on the competitiveness of banks but also concerns regarding the functioning of the European banking market if the rules were too prescriptive and uniform.

Especially the last point is worth examining further as this relates the EP to the modelled social planner referred to in H2. The EP is a legislative body for the whole of Europe that has to face EU-

⁸⁹ It is very possible, though not verifiable, that the Commission included more centralization and harmonization than it actually wanted to include in the final rules to prepare the negotiations with states that would increase complexity.

wide elections and its assessment of the Commission proposals probably reflected that. It also is much less of a regulator than the Commission and would not be held accountable for financial instability. This shows in the counterproposal by the EP to the CRR where mostly exceptions were added and more discretion was introduced.

The theory speaks of an obvious cost-benefit-relationship between stringency of regulation and flexibility and that social planners would resolve that optimally for their constituency in (potential) contrast to states that follow their own cost-benefit analysis. This model assumption of clear cost functions is highly abstract and, in reality, all central planners will conduct their own assessments of potential costs of complexity. Given the nature of the European Parliament as a highly political body that consists of representatives of states (similar to the Council), it is very likely that the Parliament weighs flexibility higher than stringency.

The Parliament is part of this overview as an important part of the Trilogue that shapes European regulation but its role remains blurry and has to be regarded with caution for the mentioned reasons.

The main points from the EP changes that correspond to the topics included in this analysis are (all based on European Parliament, 2012):

- The leverage ratio is watered down by putting more emphasis on it being in a trial phase. This gets most obvious in case of disclosure of leverage ratios from 2015 onward (not a hard rule for requiring banks to meet the 3% goal but a soft push towards that). The Commission had this in its proposal and the EP opposed it. It explicitly states that a decision on disclosure should depend on further assessments and “should take into account the decision of the Council and the European Parliament on the treatment of the leverage ratio.” (p. 431). This reduces market control but gives banks more room to breathe.⁹⁰
 - o The EP generally opposes the idea of a leverage ratio that is not risk-sensitive (e.g., pp. 24-25).
- The role of the countercyclical buffer is reduced to “systemic risk that is associated with periods of excessive credit growth only” (p. 22), which is an important qualification as all other problems would be moved even more into pillar 2 and, thus, into potential national discretion.

⁹⁰ However, the EP wants this exception mostly for smaller banks that are not systemically important.

- For prudential capital requirements in general, the EP proposed reduced power for the Commission. Instead states and the European Systemic Risk Board were supposed to get more power (Art. 443, p. 438).
- With regard to the capital base/own funds, the EP adds several exceptions and additional rules, for example to account for savings banks and their funding structure (p. 58). It also proposes longer implementation periods (for example, implicitly through a longer period in which the European Banking Authority is supposed to develop standards that accommodate to the diverse EU banking market: 2013 in the Commission proposal is delayed by three years to 2016 (p. 59))
- With regard to liquidity treatment, the EP even wants to transfer more power to the Commission by even entrusting it with setting up a delegated act for the NSFR (Art. 401a / 444(1a)).

In general, the EP seeks to increase the discretion for supervisors in regulating banks, which clashes with the Commission proposal that was relatively prescriptive compared to that. Given the EP's nature of being a legislative body and the circumstances of the ongoing Euro Crisis at that time, this is not surprising: the benefits of special rules for special circumstances – complexity – were weighed higher than in the Commission proposal. This, in turn, results in a generally more complex proposal. This alone has to be taken with caution as the Parliament could simply be driven by the same forces as the Council (explored later) and is a highly political body as argued before.

IV.11.4.3 European Central Bank

The European Central Bank also commented during the drafting process of the new legislation (European Central Bank, 2012) and probably is the least political and most social planner-like EU institution.⁹¹ Its response to both the proposed directive and the proposed regulation contains a number of suggestions two of which seem to be most important with regard to complexity. First, the ECB wants member states to be able to impose stricter regulations than the common European

⁹¹ Of course, this claim can be debated. The ECB itself is independent but political pressure and its overarching implicit mandate to hold together a club of diverse nations might actually harm this independence (see, e.g., Wyplosz, 2019). Yet, it still can be regarded as an approximation to an independent entity.

ones. Second, it wants a clearer definition of the capital base and more discretion for European regulators to adjust criteria for what counts as high-class capital.

The suggestion of allowing discretion toward stricter rules stands in contrast to the explicit effort by the Commission to harmonize rules with regard to both downward and upward discretion. The reasoning for that is the ECB's concern that macro-prudential tools that allow for national discretion like the counter-cyclical buffers could be used as safeguards against structural and systemic risks of banking systems (see p. 7). Given that banking sectors differ and financial cycles are not entirely harmonized across member states⁹² regulators would need some discretion if they did not want to use tools like the counter-cyclical buffers for other purposes such as safeguarding against systemic risks. Thus, the ECB proposed that "[...] the scope of the proposed framework could be extended to cover stricter requirements for: (a) capital; (b) limits on large exposures; (c) liquidity requirements and leverage ratio, once introduced into the Union regulatory framework." (p. 4), which would add discretion above the limited national leeway in applying counter-cyclical buffers. The problems of potential races to the top, spill-over effects, or arbitrage through different or excessive applications of these discretions would have had to be addressed by close cooperation facilitated by the European Systemic Risk Board (ESRB).

This leads to the second greater proposal of the ECB: a strengthening of European authorities in adjusting the rules. This is most obvious with regard to the capital base, which the ECB wanted to be defined more thoroughly by the EBA in cooperation with national competent authorities. Particularly with regard to CET1, the ECB suggested that the EBA should evaluate what the national competent authorities deem eligible as highest-quality capital instead of just listing what is eligible as CET1 under national laws (p. 21). Furthermore, the EBA should develop technical standards and guidelines on eligibility of the capital base (see pp. 21-25), which would drastically reduce room for maneuvering of national regulators. Hence, this strengthening of European regulators would likely reduce discretion.

⁹² This is a claim made by the ECB on p. 4 of its suggestions (European Central Bank, 2012). These different regulatory cycles mean that crises are not developing exactly simultaneously across states and neither do the roads to crises or national responses. An example for that is explored in more detail in case III: Germany overcame the Global Financial Crisis of 2007-9 relatively quickly by bailing out struggling banks and was out of crisis mode relatively fast and could start reforms to its banking sector. Italy, in contrast, did not invest so heavily into bailouts for banks and its banking crisis took much longer to overcome and regulatory reforms were more difficult. Their regulatory cycles were not aligned.

The ECB also explicitly demanded a quick and full implementation of a leverage ratio into EU regulation until 1 January 2018 (p. 20), which was a decisive move toward less complexity and also leaves no room for delay, which the Commission proposal does.

The picture looks similar with regard to liquidity as the ECB approved a quick introduction of the LCR and preparations for the NSFR. However, it again demanded more coordination through EU agencies and also wanted to be included in the process of defining technical standards and broader requirements (pp. 7-8).

While the ECB probably is the least political institution on the European stage, it seemed to pursue some own agenda with regard to Europeanisation of responsibilities. This is in line with current examinations of ECB policies both in monetary policy and banking supervision. Most notably, Tooze (2018) drew the conclusion that the ECB had become a crucial and evermore powerful actor in European politics. Others went further into the ECB being a largely unaccountable central planner (Curtin, 2017) with a strong mission to be of service to Europe and its people (Lokdam, 2020). How much of that actually applies to the ECB's stance in banking regulation and how close it comes to the social planner of the model is hard to say. Yet it fulfils many of the features of a central planner and its limited accountability and pan-European setup qualifies it as the closest we can get to a multinational social planner.

Overall, the ECB position with regard to complexity in the sense of my examination seems ambiguous: more upward discretion but also more harmonization of standards through EU agencies. If taken together, these two broader suggestions might rather lead to more harmonization as the upward discretion would have to be coordinated, which would also increase the role of the European agencies. Still, even this regulator acknowledges differences in national banking markets and sees boundaries to harmonization instead of arguing for a completely unified approach, which would be the counterfactual to the claims of the model.

IV.11.4.4 Conclusion to the central planner perspective

The transposition of Basel III into EU law from the European side very much aims at harmonization, which is also expressed by the term 'banking union' that was coined to express the desire to create a common domestic banking sector regulation and supervision. The different authorities examined here introduce different degrees of stringency in this harmonization, which

probably also refers to their role. The Commission and the ECB seem more worried about complexity and the associated ambiguity than the Parliament.

Yet, all proposals show some degree of complexity that is rooted in the diverse nature of national EU banking systems. This is a prediction of the model that a central authority would take either preferences or more fundamental factors of its constituents into account when harmonizing regulation and that such harmonization would be imperfect if there would be divergence across states. This also means that a complete harmonization is unlikely to be beneficial for all and that some complexity probably is worthwhile. This is an intuitive claim but the model in connection with this case study spells this out and also offers a mechanism how this works.⁹³ Especially the demands for more upward discretion and criticism on that confirm the equidistance approach of the model.

Overall, in the case of the CRD IV/CRR, we see that the European actors – whether they are rather political like the Parliament or independent like the ECB – have certain preferences that would result in some complexity of the eventual regulation.⁹⁴ This gives support to hypothesis H2, which claims that such social planners would try to maximize welfare for members by weighing costs of complexity and discretion against benefits that might stem from structural differences or simply diverging preferences of the actors.

This result and the corresponding theory are not trivial even if the general result is not surprising. What H2 says is that regulatory corridors or complexity in the sense of the model are unlikely to be only costly. Complexity can be beneficial as it increases flexibility in harmonization attempts. The actions and proposals by the European bodies support this claim, which would essentially mean that there is an abstract but positive optimal level of complexity (and flexibility) in regulatory harmonization. Showing this is the overarching purpose of this exercise.

Of course, there are alternative explanations for the behavior of the European bodies examined here, which would not draw the picture of some complexity being welfare-enhancing. One explanation would be that European policymakers already take into account or even pursue the interests of certain states. This cannot be ruled out as one would have to clearly define the point up to which taking preferences and realities in states into account is simply the job of a central

⁹³ With enough data, one could use this model to estimate how the circumstances in different countries contributed to complexity.

⁹⁴ These preferences will become somewhat clearer in the following analysis of national positions. Yet, they are rarely clearly published.

planner and when this switches into pursuing the state's interests. However, given the proposals and reactions outlined before as well as the heavy contestation of proposals by states (discussed in the next section), it seems unlikely that these stem from takeovers of states. What cannot be ruled out though is that the more political entities, especially the Parliament, already became a forum for negotiations in the sense of H1. This is less the case for independent actors like the ECB. This might actually explain that the Parliament strived for much broader corridors, more complexity, than the ECB. This does not change the qualitative result that all central actors saw merit in giving national regulators more flexibility through imperfect harmonization.

Another obvious alternative would be the regulatory capture theory. One could assume that European lobbyists might have persuaded the European rule-makers to create more complex regulations and to widen the regulatory corridor. There are multiple reasons that make this unlikely for the regulatory complexity introduced in these proposals. First, some of the proposals that would lead to more complexity are based on upward deviation from harmonization such as the ECB proposal to allow stricter prudential requirements. This is not likely to be a strategy of lobbyists to increase complexity to serve their customers. Second, most complex proposals that were discussed here can be traced back to realities of European banking markets. Lobbyists might very well hint at such realities but there is a clear path between, for example, low capital positions of European banks and a delay in introducing the Leverage Ratio, which hints at simple alignment of interests instead of capture. Last, there is the philosophical concept of Occam's razor that says that explanations become more unlikely the more assumptions it takes to come to this explanation. A decisive regulatory capture of the process on the European stage would have required powerful lobbyists agreeing on a strategy to introduce more complexity on the European stage and then convincing different bodies to introduce such complexity for the sake of their customers. This stands in contrast to the explanation that some flexibility is welfare-enhancing, which is why European bodies would go for it – even though the theory leading to this conclusion is somewhat complicated.

This is not to say that the alternative explanations are without merit. This case study only focusses on particular fields, it leaves out much that has been happening before and after the negotiation of the CRD IV/CRR package and the theory cannot explain every decision taken in the process. The case also does not estimate a true level of regulatory complexity that would be welfare-maximizing. It only shows that more complexity compared to a baseline can be the result of a need for flexibility. Yet, it seems as if the theory of regulatory corridors provides a most-likely explanation for complexity in the proposals of important European central planners.

This leads me to the conclusion that the behavior of European policymakers, especially the Commission and the ECB, supports hypothesis H2 that social planners would introduce some complexity even without states interfering.

But states certainly interfered in the later stages of the process through the Council decisions. This will be explored in the following.

IV.11.5 National influence

With regard to the central claim of the model on complexity as a solution mechanism (hypothesis H1), I will now compare this 'European' proposal to the positions of the member states. A deviation in the Council proposals from those of European agencies means that states did implement their preferences here and the central question is how they did that. Several sources further allow for estimating national preferences in the negotiations. There are two stages here: intra-council negotiations and the Trilogue, where Commission, the Parliament, and the Council agree on rules. Both levels are intertwined.

In the following, I show how these negotiations worked out and how this relates to the predictions of the model. This was already done in much detail for the more anarchic international stage with regard to operational risk treatment in case I. This case moves that into a setting where a proposal existed and states negotiated among each other but also with two central co-legislators. The process in itself shows how disputes were resolved through complex solutions and how some actors actually wanted to narrow regulatory corridors for national regulators to reduce complexity in the sense of my model. Negotiation documents mention disagreements between states in Council negotiations without explicitly calling out single states (most notably the first progress report of the Council (Council of the European Union, 2011)), which would already suffice to satisfy the basic assumption of the model that state preferences diverge. Still, I will include some explicit manifestations of states following their interests when appropriate. As these official documents explicitly outline the positions of member states and one can directly trace outcomes to states' positions, the alternative explanation of a pan-European regulatory capture is neglected here. As explained in the introduction to the empirical chapter, national regulatory captures might very well affect preferences of member states but the model and this analysis starts later and is focused on how the states resolve disputes among them based on predetermined preferences.

Following Howarth & Quaglia (2016a), one can already spot a general divergence between the United Kingdom, joined by some northern EU countries, and the continental, southern EU including Germany and France. The former were keener on stricter rules, the latter wanted more discretion and less strict regulations in general to support their local economies (Masters, 2012a). Howarth & Quaglia (2013) showed reasons for that, which are rooted in different levels of capital held by banks in member states as well as very different structures of national banking systems. One also has to keep in mind that these negotiations fell into a period of particular stress during the European Debt Crisis where southern member states were already struggling with their economy.

In my choice of sub-cases, I rely on an outline of contested points by the Council (2011). This reduces the scope of my investigation to cases that were openly disputed across member states, which necessarily leads to a narrower look at issues present and certainly leaves out some backroom negotiations about other topics. However, this has the big advantage that I can rely on official documents and that European lobbyists played a smaller role here. They might have influenced some countries or facilitated rulemaking in their favor but this is well in the scope of the model. What they could not do is to introduce ideas in the shadows of the regulatory sphere.

To make this clear, this does not rule out industry influence per se but it moves such lobbying into the national preference-formation if it comes to substantial ideas. This means that multinational lobbying efforts are not a likely factor that introduces new complexity even though it might have influenced the magnitude of how influential some states' views were both in the first Commission and Council proposals and the Trilogue later. In cases of upward divergence (such as the case of flexibility in prudential requirements), it even seems unlikely that any industry influence contributed to the complexity present there.

In the following, I will go through several areas where explicit disagreements between member states occurred and show how they were solved. I find multiple occasions where diverging preferences were resolved by giving more discretion to national competent authorities⁹⁵ in order to accommodate to these differences. These cases clearly support the model and hypothesis H1. I also find other occasions that seem promising as further support for the model but turn out to show different mechanisms or do not fulfil the assumptions of the model and show its limits.

⁹⁵ This is a term used for supervisors and regulators that act on the national stage and have to be named by member states.

IV.11.5.1 Overview

The Council of the European Union, where the member states meet and negotiate EU legislation, is the central battleground for my investigation with regard to hypothesis H1: did the member states add flexibility to the Commission proposal in order to enhance discretion for themselves? In which areas did they do that?

My model would predict that in areas that show disagreement, more complexity would occur to accommodate to the differences in preferences. This would mean that the Council compromises would show a different degree of complexity than the Commission proposal and the other EU bodies. One has to keep in mind that the legislative process is taking place simultaneously through a ‘Trilogue’ (see previous section) between the Commission, the Parliament and the Council. Yet, the Council (and to a limited extent the Parliament) is the arena where state preferences are most likely to clash. In its first progress report in response to the Commission proposal, the Council outlines the most contested issues that need resolution without naming particular countries (Council of the European Union, 2011). I will focus on the following topics:

1. National upward discretion in implementing more prudent rules: maximum harmonization as proposed by the commission vs. some flexibility. States disagreed on whether it should be possible for single MS to discretionally impose more prudent pillar 1 measures than envisaged in the Commission’s CRD IV/CRR package. This was, among others, addressed in a revision of Article 124 of the Directive proposal.
 - a. There were also member states that opposed a centralized decision-making on prudential requirements by the Commission through delegated acts, which basically meant that the Commission could introduce stricter prudential requirements if Parliament and Council did not object. This Article 443 of the CRR proposal was contested.
2. The question on whether to empower the Commission to centrally change regulation also applied to the introduction of liquidity measures (i.e., Article 444 in the proposed Regulation that suggested delegated acts as a way to formulate specific measure to introduce a liquidity coverage ratio). This was supported by some members, others wanted to have more influence over the procedure. As this issue is difficult to disentangle, includes a number of different levels, and also exceeds the scope of this investigation as it would cover future acts. Hence, this part will not be covered in depth.
3. The definition of own funds, what I refer to as capital base,

- a. Especially with regard to the definition of CET 1-capital
- b. And the treatment of greater investments into insurance companies, which has a large effect on effective capital requirements (Art. 41, 42 CRR proposal).

4. The leverage ratio (Art. 482 of the CRR proposal) and publication requirements.

These fields were contested among states and I will trace the process of how they were transposed into EU law in the Trilogue. The usual position was that some member states were content with the Commission proposal and some were not. Given that the Commission probably tried to find rules to satisfy member states' needs, this seems not far-fetched. Furthermore, the rules were based on Basel III, which was negotiated by some but not all member states, whose success in pushing through their preferences might have varied as well.

In the following, I will go through these larger areas of dissent one by one to compare their evolution over time. The theory would predict that instead of agreeing on some different but consistent rule, the outcome would be a complex solution that would allow for multiple outcomes such that states get discretion in how they implement the rules.

IV.11.5.2 Prudential requirements

IV.11.5.2.1 Discretion in prudential requirements

This case is most clear-cut and requires relatively little elaboration: some states were not satisfied with the maximum-harmonization approach by the Commission as this would have robbed them the opportunity to impose stricter requirements in their domestic jurisdiction than envisaged by the Commission. The argument for such discretion is straightforward and was already employed by the ECB in its opinion: different banking systems might face different challenges and different degrees of risk, which might make it necessary to adjust regulation upwards.

The Commission with its maximum harmonization approach wanted to reduce arbitrage or other evasion possibilities but some states were willing to sacrifice some of this to increase their leeway in adjusting rules to their national banking systems. In line with the model, the Commission saw diverging prudential requirements in parts of the EU as costly and wanted to reduce them.

Some member states supported the proposals by the Commission to take over the responsibility for strengthening prudential requirements through delegated acts if necessary (with reservations on how far these powers would go though) while others wanted more upward discretion for their national supervisors (Council of the European Union, 2011).

One of these member states was the United Kingdom – then home to the heart of Europe’s financial industry, the City of London. The Financial Times (Barker, 2011) revealed that “[t]o the delight of European banks – and the consternation of Whitehall [synonymous for the British government] – the Commission in July proposed a limit on how much capital national regulators could force banks to hold.” It further reports that Michel Barnier – the Commissioner in charge and later also Europe’s head Brexit negotiator – was greatly reluctant to leave large parts of prudential supervision to national authorities instead of European ones.

The proposed increase in discretion included multiple parts related to pillar 1 regulations both in the Council’s Directive proposal (Council of the European Union, 2012a, 2012b, 2012e) and in the Regulation proposal (Council of the European Union, 2012c, 2012d, 2012e):⁹⁶

- Reduction of the power of the Commission to change capital requirements through delegated acts for the entire EU (Art. 443, CRR Council proposal).
- Discretion for members states to introduce prudential capital requirements exceeding those from the regulation (new Art. 443a CRR Council proposal) and who has the power to overrule that (the Commission or the Council).⁹⁷
- The power of national supervisors to impose risk buffers on banks: countercyclical buffers but also buffers to address systemic risk both based on national discretion and general rules for the most important institutions (this evolves around Art. 124 of the CRD IV Commission proposal)
 - o This matter also included mutual recognition of such national buffers, which is related to home and host country problems (meaning who actually regulates a cross-border bank). This matter is of little interest for this case but is a major issue in regulation.

I will go through the process of how the discretion of member states on prudential requirements and risk buffers evolved. The overall theme is that states moved from having very little unilateral influence on regulation and capital buffers – essentially only through setting countercyclical buffer at somewhere between 0% and 2.5% – to much more, potentially unrestricted discretion and additional extra buffers. The model predicts that as a result of the conflicts of diverging preferred levels of regulation, which had to be resolved to achieve some harmonization of rules

⁹⁶ The Council proposals differ, there was one agreed in a working group before the Council meeting and one after the Council meeting.

⁹⁷ This also included home and host country issues for internationally active banks. While very important in banking regulation, I will not cover them here.

(proposition 1 / hypothesis H1). A resolution through complexity (in contrast to, for example, a clear prudential requirement that is somewhere in the middle of all preferred requirements) would support the claims of the model if this emergence can be traced back to these diverging preferences.

IV.11.5.2.2 Higher prudential requirements

The pillar 1 prudential capital requirements introduced in Basel III were translated into EU law in the CRR. However, these Basel III requirements were just minimum requirements and striving for more safety might lead a regulator to making them stricter. This was already part of the Commission proposal but only in a sense of a maximum harmonization approach, which meant that the Commission itself could introduce stricter requirements for the whole EU through delegated acts for an unlimited time. States could not unilaterally change the requirements. This would have led to a uniform regulation across countries but was not acceptable to the Council as some countries did not want to grant the Commission that power and/or wanted to be able to impose stricter capital requirements in their national realm (Council of the European Union, 2011).

The Council proposal of the CRR of 2012 (Council of the European Union, 2012c, 2012d) thus changes Art. 443 of the Commission proposal in favor of national discretion.⁹⁸ In a first proposal before the Council meeting in May, the old Art. 443 was replaced by two new articles:

1. Art. 443a, which allowed member states to introduce stricter prudent pillar 1 measures after informing the Commission (and notifying the Council and European regulators) – basically a reverse delegated act. They had to fulfil some requirements for that but it was already a departure from the maximum harmonization approach. Yet, the Commission was still in charge of evaluating the application of the respective national competent authority. This regulation applied to macro-risks.
2. Art. 443b, which still allowed for European-wide delegated acts by the Commission but for a limited amount of time and with fewer tools and more required deliberations with European regulators such as the EBA. This regulation applied to both macro- and micro risks.

⁹⁸ This was also done by the Parliament especially with regard to delegated acts by the Commission and how much they were restricted in introducing them (European Parliament, 2012).

This already reduced the power of the Commission and moved the CRR away from maximum harmonization toward a more flexible approach that also constitutes a more complex one in terms of the model definition.

In the course of the Council deliberations (Council of the European Union, 2012d) this approach, especially Art. 443a, was changed once again: not the Commission was to decide (within boundaries) whether a member could apply more prudent measures but the Council. This made the more prudential measures even more subject to political bargaining and probably reduced the harmonization character of the CRR.

The eventual regulation then got even more complex. The Council, the Parliament, and the Commission entered the Trilogue deliberations and agreed upon a new CRR. The old Art. 443a became Art. 458 in the final regulation (Regulation 575/2013/EU (CRR), 2013). This article allowed member states to introduce measures of increasing prudential measures such as own funds requirements by 25%⁹⁹ with only notifying their partners and European actors (Art. 458(10)). Further increases were subject to approval by the Council upon recommendation by the Commission. These applied for macroprudential systemic risks and, thus, states could address stress in their financial system and potential bubbles.

Altogether, states with a desire to have more prudent regulations got leeway while their peers did not have to implement these stricter rules. This is an increase in complexity in line with hypothesis H1.

IV.11.5.2.3 National discretion in buffers

The decisive difference between the prudential requirements and the buffers is that the former are required to run a bank while buffers are built up through banks operating and keeping profits until the buffers are filled. These buffers could also apply to particular parts of the financial sector not only to the whole banking system.

Such buffers were part of the CRD IV and had a national component from the beginning: domestic regulators and supervisors could set countercyclical buffers of up to 2.5% of risk-weighted capital

⁹⁹ Large exposure requirements: 15%.

based on the economic situation. Aside from that, such buffers were applied automatically and EU-wide (such as Capital Conservation Buffers).

This was not enough for some states and also the ECB feared that this limited flexibility might result in states using the countercyclical buffer for addressing systemic risks, which would not have been in line with the actual purpose of safeguarding against overheating systems in booms. At least some states wanted such stricter requirements that they could impose to address risks (Council of the European Union, 2011).

In a first step, the Council working group vastly changed Article 124 of the Directive (Council of the European Union, 2012a), which previously only entailed the countercyclical buffers. It was extended by a provision that national supervisors could impose a systemic buffer of up to 3% of the asset-class that is regarded as risky with only the requirement to notify their peers and explain this move – also to other member states that might be affected.¹⁰⁰ Buffers over 3% were subject to approval by the Commission.

During the Council meeting, this was changed and an additional buffer zone between 3% and 5% of relevant assets was introduced. There, the Commission could deny the application of such a buffer but national authorities could diverge from that decision if they could explain their actions (Council of the European Union, 2012b). The Commission only had a binding vote in cases of buffers being set above 5%. This was then also the rule included in Art. 133 of the final Directive (Directive 2013/36/EU (CRD IV), 2013). Thus, the states also gained more upward discretion in this case, the upper boundary of regulation was extended (and ever more so the longer states discussed).

In a move that limit complexity, the final Directive also introduces a special risk buffer for globally and otherwise significant institutions that applies to the whole EU. This was upon initiative of the Parliament but is part of the story that ends with much more upward discretion for member states and a higher lower boundary of regulation for significant banks than envisaged before the Trilogue.

¹⁰⁰ These home-host country issues are disregarded here.

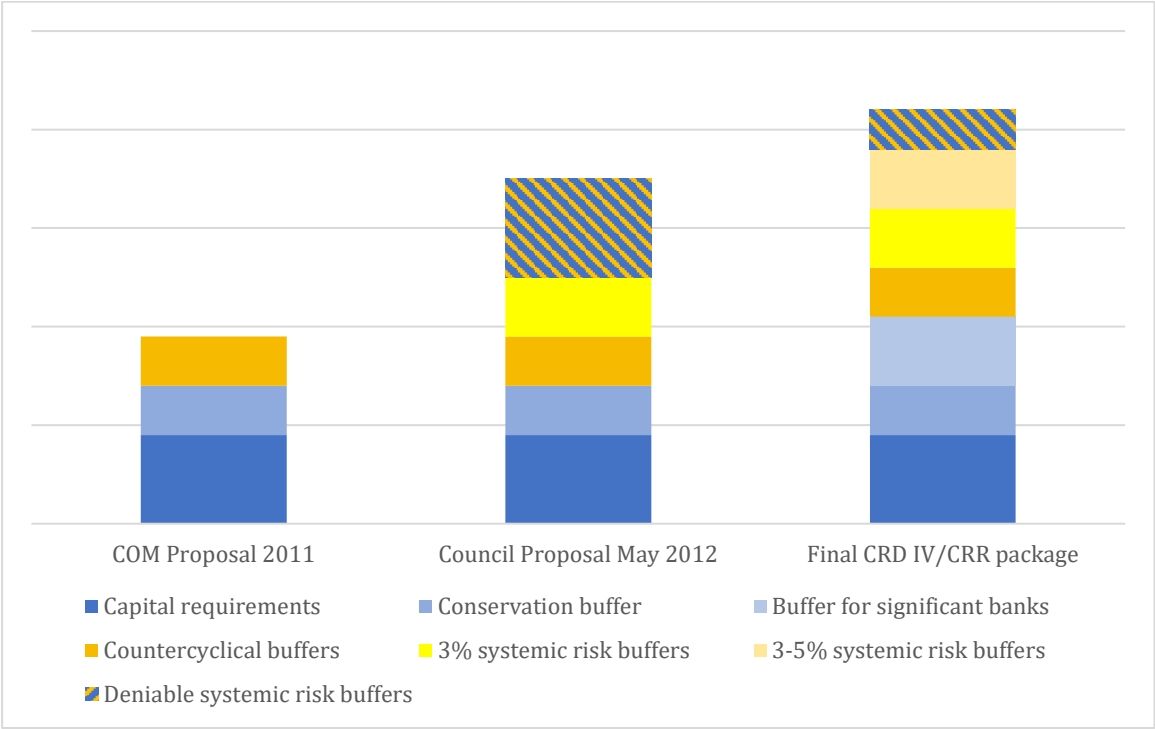


Figure 10: Discretion for states in regulatory capital. Capital requirements, conservation buffer, and buffers for significant banks are EU rules and fully harmonized (shades of blue). The rest is up to the discretion of national supervisors (shades of yellow; here is a regulatory corridor). Some additional risk buffers can be denied, which is represented by the mixes blue-yellow area (no scale as both EU and member state measures are not exactly specified).

IV.11.5.3 Leverage ratio

The matter of a leverage ratios seems like another promising example to show the mechanisms of the model. The leverage ratio was part of the Basel III package and also widely popular in international discussions as it would result in a simple floor for regulatory capital. This would have been a counter to efforts by banks to use, for example, internal ratings-based modelling to reduce their regulatory capital but would also have served as a safeguard for unintentional miscalculations of risk that could turn out disastrously. A leverage ratio would be a hard lower capital floor based on pre-defined exposures, which would reduce the room for maneuvering for banks even if they can exploit complexity of rules.

What makes this a promising example is that member states had diverging preferences with regard to such a leverage ratio (see Council of the European Union, 2011). Howarth & Quaglia (2016a) show that France and especially Germany were opposed to a mandatory leverage ratio and at least wanted long implementation periods.

The Commission had already proposed a rather benevolent regime in 2011 with a testing period until 2017 to see how such a leverage ratio and all its possible implications would work out for banks, financial markets, and states (European Commission, 2011b). The actual implementation would have happened after that. The diverging views of member states mostly occurred with regard to making this implementation automatic (which would mean a stricter regime) and abolishing public disclosure requirements that would have allowed for market control. Banks were supposed to publish their leverage ratios from 2015 onward. These points were explicitly mentioned in the Council (2011) document outlining points of disagreement and, thus, is of major interest for this investigation.

Even though there were diverging interests, this did not result in more complex solutions compared to the Commission proposal.¹⁰¹ The proposals by the Commission were more or less adopted by member states.¹⁰² Hence, this is an example where increasing complexity was not part of the solution and the model mechanism do not seem to apply.

This might stem from two factors present here:

1. The initial proposal by the Commission already left much of the eventual regulation open by setting an implementation period after which the actual leverage ratio requirement would be introduced. This might have simply moved the clash of preferences further into the future.¹⁰³ In terms of the model, that would mean that the cost of this regulation was seen as minor. This is related to the initial point that some member states actually wanted a clear road-map to implementation after the test period but also did not get this.
2. The points of diverging interests simply did not leave room for complexity. This is true with regard to the diverging views on how much implementation in 2017/18 should be pre-agreed in the 2013 CRR but also with regard to the disclosure of leverage ratios from

¹⁰¹ There is one exception: the 2012 Council decided to increase the number of risk classes – like Basel I risk-weights – in leverage ratios (Council of the European Union, 2012d, 2012c). Article 416(8) was changed from treating all but the safest assets with a 100% risk-weight (unmistakably safe assets: 10%), which seems quite straightforward given the purpose of the leverage ratio. This was changed to four risk classes, which did not necessarily increase complexity in the leverage ratio, as it was still applied with these new risk-weights over all institutes, but it lowered the absolute value of the capital necessary to cover leverage ratio requirements giving banks more leeway when exploiting complexity from other provisions. Thus, this was an increase in ‘remote’ complexity.

¹⁰² This might have been the result of the Commission already incorporating the most contested points with its rather lenient approach. But this explanation would disregard the diverging preferences of member states here – especially of those that wanted stricter rules through automatic implementation.

¹⁰³ The very similar output floor requirement (that put a lower boundary on how much banks could reduce capital requirements through internal models) was subject to much contestation later on.

2015 onward. Both subjects do not allow for much complexity in terms of treating countries differently:

- a. If, for example, disclosure would be made optional (an increase in inner-European complexity), banks from countries that do not require disclosure might be pressured into voluntarily disclosure, leaving the banks vulnerable that would not meet the leverage ratio requirements. This makes different treatment of banks across the EU difficult and one side simply had to win the argument. Here, the disclosure countries won.
- b. Implementation of the ratio was conditional on many factors that would only show during the testing period. Accounting for all contingencies in an ex ante regulation might have been prohibitively costly. Things would have been different if some countries would have preferred no testing period but that was not on the table.

This sub-case shows a provision that would lead to complexity following my model but did not result in such complex but relatively clear-cut agreements (at least when measured based on my definition of complexity). This might be the result of the impossibility to reach complex arrangements here or could also be rooted in postponement-effects such that the actual negotiation would take place later and might result in more complexity. Hence, this is an example for a case where the model has relatively little explanatory power.

IV.11.5.4 Other important points of the CRD IV-package (including capital base)

The CRD IV/CRR package included plenty of other provisions among them crucial and important ones. An assessment of these rules needs to cover the most important of them as well. These are the definition of own funds (capital base) as well as specific derogation methods, and liquidity requirements.¹⁰⁴

Yet, these potential cases suffer from two caveats: first they are vastly complicated and each would take multiple chapters to explore and, second, the process of their development is relatively hard to trace given the multitude of different provisions even in one of these fields. This makes it all but impossible to build a clean argument around those issues. Another important issue is that these fields are very prominent and probably were subject to much unofficial deliberation even prior to the Commission proposal. This has little effect on the evaluations of the Commission proposal but

¹⁰⁴ One could also argue that counterparty risks fall into this category but they will not be covered here.

on the subject of how national governments influenced decision-making is hard to grasp due to this.

This is why I will only briefly go through the respective aspects of the package and try to link them to the theory as robustness-checks but with relatively little explanatory power for hypothesis H1 by themselves.

IV.11.5.4.1 Own funds

IV.11.5.4.1.1 Definition of highest-class capital

The first matter is on own funds where we basically see the prototype of complex outcomes in the sense of the model: the EU put “substance over form” (Höpfner, 2014) and allowed multiple regimes to fulfil the capital requirements imposed by the package. It depended on national definitions of highest-class capital that just had to fulfil a number of demands to qualify as such. This is a departure from the Basel III compromise, which referred to Common Equity Tier 1 (CET1) capital, highest-class capital, as common stocks (and through that also retained earnings). The EU rules allowed for a much broader definition of such capital and also included hybrid capital of some types that was not necessarily as loss-absorbing as the envisaged CET1 capital. This was criticized by the BIS in an interim report on the implementation of Basel III (Basel Committee on Banking Supervision, 2012; Masters, 2012b).

This is rooted in the fact that Basel III was meant for large, international banks that usually are publicly listed while the EU implemented Basel III for all its banks in all its member states. This necessarily led to clashes with the Basel regulations. Mutuals, cooperatives, and other types of banks had to fulfil the capital requirements but they relied on very different types of equity. Howarth & Quaglia (2013) go into detail about how the Basel III rules were a mismatch regarding the different banking sectors of the EU. The solution was the well-known multiple regimes solution where leeway exists.

Therefore, this seems like a perfect case with diverging national preferences obviously rooted in systemic differences resolved through a complex regime but that explanation does not fit here. A crucial implicit assumption of the model is that a coherent regime is possible in general. It argues why states might prefer more costly complex regimes over simpler ones. This case, in turn, does not exhibit any way to impose a coherent regime on the EU. Any such regime would be so costly for at least some members that they would not participate in it (i.e., block it in the Council). Take

Germany as an example where state banks relied on special forms of funding that were classified as hybrid capital. These banks would have had to be completely remodeled if the EU had translated Basel III directly into Union law. The same applies to mutuals and cooperatives – Germany's banking sector would have run into major trouble. Such a policy was not viable as it was likely to be more costly than any complexity.

The alternative to this complex system would not have been a more coherent one but to reduce the scope of the whole EU regulatory package to publicly listed banks. This would have meant that for all other banks, national regimes would have applied and that would have increased complexity even more.

These special circumstances led to a clearly complex solution that is not covered by the model. Also, the EU was later seen as largely compliant with Basel III in this regard by the BIS as they accepted the substance-over-form-approach in general as sufficient to avoid circumvention of the rules (Basel Committee on Banking Supervision, 2014).

IV.11.5.4.1.2 Significant investments into insurance companies

The matter of deduction of own funds due to involvement in both banking and insurance businesses is another matter where great divergence between EU member states occurs and influenced rulemaking. Investments into insurers can lead to double-counting of own funds, which is why they usually have to be deducted from the capital base. This means that capital that is counted as regulatory capital in the insurer cannot be counted as such for the bank at the same time.

In a conglomerate of banks and insurers, this might be circumvented to allow for such double-counting. This was supposed to be prevented by Basel III provisions that stated that the consolidated approach that such conglomerates might use as an alternative to separate regulation must not result in lower overall capital requirements than the normal deduction approach (see Basel Committee on Banking Supervision, 2017b).

According to Howarth & Quaglia (2016a) France already tried to stop such a provision on conglomerates in Basel and was not successful with that. They tried again in Brussels. An end of double-counting of capital would have resulted in increased requirements for France's banking conglomerates, which is why they opposed it along with, for example, Germany. The UK was for

the stricter anti-double-counting approach and also refused to allow its conglomerates to use alternatives to deduction later (Bank of England, 2013).

The eventual result of the dispute was a reduction in stringency of the requirements compared to the Basel III rule. Already the Commission in its proposal adjusted for that and allowed that national competent authorities might allow conglomerates to not deduct such own funds with reference to the old Financial Conglomerates Directive (2002) if certain criteria were met (Art. 46 of its proposal (European Commission, 2011b)). Changes to this regime would be made through a revision of the old Directive.

This was even more weakened in the Council deliberations and the final Regulation even includes a provision under which national competent authorities can allow for non-deduction with even lower requirements until 2022 (Art. 471 of Regulation No 575/2013/EU (CRR), 2013).

Here, we see an increase in complexity even under the regulation that was supposed to harmonize rules for banks across the EU. One and the same conglomerate could be treated differently under, for instance, French and British supervision depending on what the relevant competent authority decided. This might result in costs through multiple channels; e.g. banks and insurers from different member states might form inefficient conglomerates that only become profitable through preferential regulatory treatment. Obviously lower capital requirements could also have a straightforward negative impact on financial stability, especially if those most exposed to risk would move to regulatory 'havens'. Yet, states went for that approach.

The model provides a fitting explanation for that: States had diverging interests, some wanted to let their conglomerates to face lower capital requirements, some wanted more security and a level-playing field. Through the compromise that national competent authorities could provide exemptions from a general rule to prevent double-counting, all states came closer to their preferred option.

IV.11.5.4.2 Liquidity measures

As discussed before, the liquidity measures were moved to a later date already by the provisions in Basel III to have an extensive observation period until 2015 (LCR) and 2018 (NSFR). However, the Commission proposed that it would simply introduce them later through a delegated act (European Commission, 2011b) but that was contested by some member states that wanted more control over the process (Council of the European Union, 2011) – probably because they feared

the large impact of binding liquidity ratios on their banks, which they also stated in the Council declaration. Eventually, the final regulation did not change much in the Trilogue.

First, the Council wanted to delete the provision that allowed the Commission to introduce the LCR through a delegated act (Council of the European Union, 2012d), which would have been a win for the one side that wanted more control (probably to push the LCR rules into their preferred direction in later legislative procedures). However, it was not possible to find evidence on who was more in favor of what with regard to liquidity treatment. There are hints from a Financial Times (Mackenzie, 2013) analysis that Mervyn King, the governor of the Bank of England, of all people was among those arguing for caution as strict and quickly implemented requirements would have potentially harmed the recovery of the economy.

The Trilogue resulted in a compromise that was more tilted toward the Commission proposal: Art. 460 of the CRR puts responsibility for implementing the LCR on the Commission but introduces a long implementation period with a gradual increase toward the final ratio, which would bind the Commission's hands for some time and benefit those banks that struggle to meet this ratio. This gradual implementation is in line with proposals from Basel. So, it might also be imposed on negotiators from outside.

However, this deferral is not necessarily costly and it would require a long argument to examine whether longer implementation periods are consistent with the theoretical definition of complexity. Thus, the liquidity case does not provide much support for the theory but neither contradicts it.

IV.11.6 Summary and conclusion

The case of CRD IV/CRR gives support to two hypotheses of the model: states as well as social planners would resolve divergence in preferences and systemic settings of national banking systems through complexity. This applies not only to narrowly defined subjects such as operational risk in Basel II but also in the very broad and holistic overhaul of EU banking regulation.

This case shows that all entities that could be regarded as some sort of social planners for the European Union would introduce certain levels of complexity in their proposals depending on their view of what is important for the bloc. The Commission preferred a strict approach with little

complexity in the sense of the model for some areas such as prudential requirements and risk buffers. When it came to newer, less-tested measures such as leverage ratios and liquidity measures, its proposals were less coherent. Furthermore, when it came to defining high-quality own funds, the Commission did not have a choice but to introduce discretion as a unified set of rules was not compatible with the EU banking systems. The Parliament with its proposals was less focused on harmonization and weakened coherence but one could argue that the Parliament does not even qualify as a social planner as there are both pan-European and national policies at stake.

The European Central Bank as the most independent institution among those central planners also advocated for limits to harmonization especially with regard to allowing national supervisors to increase requirements. This call for more upward discretion was directly related to concerns that the benefits of individual regulation for individual circumstances would outweigh the costs of potential regulatory arbitrage. This gives support to the claims of hypothesis H2 that social planners, depending on their estimated cost and benefits functions, would allow for discretion for their constituents even if this might be costly. The case of the ECB position also gives support to the rather unintuitive claim of the model that upward discretion might be an issue (which corresponds to the equidistance approach that leads to proposition 2).

In contrast to these central planners, states in the Council of the European Union followed their national interests and vastly increased their discretionary space when they entered the rulemaking procedure. They introduced more upward discretion and control in prudential requirements and risk buffers than all other European bodies. They also reduced the powers of the Commission to introduce uniform rules in favor of their national supervisors. This increase in complexity in areas where great divergences existed is in line with hypothesis H1 and the basic claim of the model.

However, this case also shows limits to the model. First, the example of own funds shows how a simple solution, as opposed to a complex one, might not be possible, which makes the model obsolete. It has no explanatory power for complexity if there is no alternative. Still, within the own funds framework and when abstracting from the overall problem of capital definition, one can find again the mechanisms described by the model – for example when examining the deductibility of investments into insurers in conglomerates. There, the Council reached a solution that is vastly more complex than all proposals and allows for much national discretion to accommodate to the preferences of France on the more lenient side and the UK that did not want to give preferential treatment to conglomerates.

Altogether, the CRD IV/CRR package helps to understand the applicability of the model in real circumstances but also lends robustness to the claim that it describes real solutions to diverging preferences.

IV.12 Case III: The European bank resolution framework

Resolution is another field where the model might help to understand outcomes even though this matter is a bit more remote from direct regulation of banks. A credible, efficient resolution regime would result in banks being thoroughly controlled by markets just as normal firms – it would actually bring banks closer to such real economy firms. A non-credible resolution regime, e.g., because the failure of a bank would disrupt the economy (and cost) so much that resolution is not feasible, is problematic as it encourages excessive risk-taking by such a bank that could rely on being bailed out. This was an issue before and contributed to the emergence of the 2008 Financial Crisis. Such resolution regulation would not primarily have a direct effect on banks – like capital requirements – but more an indirect restraining effect through markets that would have to price in the risk of default.

A bank that cannot rely on being bailed out but faces resolution in case of failure will be more conscious about risk-taking. In theory, also the pre-2008 regime did not explicitly include bail-outs but they could be expected with a certain probability, which influenced risk-taking. A credible resolution regime would mitigate that expectation of bail-outs. Complexity in the sense of the model is a great problem for this credibility as there is some probability that resolution will not take place or will be watered down, which reduces its regulatory impact (and is problematic in the case of resolution, of course).

The European bank resolution regime after the Financial Crisis shows quite some of these issues, whose emergence is described by the model. Howarth & Quaglia (2016b) already examined the main difficulties that occurred during the negotiation process. They show how the European bodies struggled with member states to achieve less complexity of rules, they also show how complexity became costly through making the regime less credible. This comes close to the examination of the previous cases but is based much more on their interviews with policymakers. I can make use of this previous work by re-interpreting it in the light of the model.

First, this case of the European resolution regime enables a further robustness check of H1 and H2 that refer to complexity as a basic solution mechanism (in a different setting and with different ‘preference points’) and the role of central planners as the Commission and other European bodies are important actors in the process. Preferences and outcomes are not directly comparable to those in previous cases as resolution is more about a framework that applies in crisis cases. This stands in contrast to the permanent requirements that apply to banks that I have investigated

so far. Thus, this case adds to the examination of regulatory decisions by enlarging the scope of applicability.

One particular aspect that I will go into is the addition of precautionary recapitalization as a deliberate loophole in the resolution framework. Precautionary recapitalization means that states can actually decide to bail out failing banks that are not beyond repair. Banks would then receive new capital from the state without having to enter resolution. This provision came into play in the course of Greek and Italian banking troubles in 2015 and 2017 and, thus, had real-world implications. This means that we see a clear introduction of more complexity whose use was explicitly criticized by some as reducing the credibility of the resolution regime.

Second and most importantly, however, we can observe a rare case of multi-period rulemaking in the resolution regime, which refers to the so far untested claim of the model that complexity might increase over time after a crisis (stated in hypothesis H3). The main purpose of this case is to get to this intertemporal part of the rule-making process. After the resolution regime was put into place in 2014, parts of it were changed in the course of the revision (or completion as it was framed) of the whole regulatory framework in 2017-2019. These changes were based on a new international agreement on how to determine eligible capital provisions (broadly meaning banks' liabilities that can be used to recapitalize a bank or to pay for its resolution in case of failure – a second layer of capital provisions that ensures resolvability). The model would predict that the overhaul of these rules regarding the eligible liabilities would make them more complex in the sense of more exceptions over time as the expected costs of complexity would decrease and the benefits of such exception would become dominant the longer the last crisis event lied in the past. One regulator (Interview_Regulator#23_2020) actually referred to eligible capital provisions (called MREL) of the resolution framework as a prime example for complexity as one could see which states would have included what exceptions and nobody would get the eventual implications of the rules anymore (they could be clarified by European bodies though).

The narrative fits perfectly into the model world at first sight. There is variation in time and momentum for a change in rules, the general case of resolution shows diverging preferences of states that might even change over time, and we will see that the new eligibility criteria indeed became much more complex after their overhaul. This makes MREL a most-likely case for finding some mechanisms described by H3 even though this part of the model was designed with having longer terms in mind (e.g., Basel I vs Basel II), which cannot easily be examined as too many other

factors play a role here. The exact connection between the theory and the case is discussed later in subsection IV.12.4.

However, using this short-term case especially for the third part of the model is a double-edged sword as it provides a rare opportunity to follow a regulatory change without too much noise but this also means that there is little room for the changes in preferences that the model would predict. While fitting into the narrative of the model, the intertemporal aspect of this remains negligible and one could even argue that the overhaul of MREL was not really an overhaul but just the completion of a regulatory process. Eventually, this will mean that this case gives no support for the model claim that complexity might increase over time. It is rather an increase of complexity due to more restrictive rules in general – which might be covered by the first two hypothesis but has little to do with H3.

Yet, this overhaul is worth including as part of the case as it can show some possible reasons for why that part of the model does not work, which could feed into a broader discussion of the relationship between regulatory cycles and complexity. This might then become subject of future investigations that could try different approaches to translate the static model, that seems to have some merit to it, into intertemporal environments.

In the following, I will first introduce the case of the European bank resolution framework that followed the CRR/CRD IV reforms. I will make use of work by Howarth & Quaglia (2016b) and look at their results from the angle of complexity to evaluate both H1 and H2. I will also make use of my previous research on the matter. This sets the stage for evaluating the special case of eligible liabilities. Second, I will discuss how the intertemporal hypothesis would fit into this picture in theory. In a last part, I will discuss how this relates to the overhaul of the resolution framework in reality.

IV.12.1 The European resolution framework: the remote remedies of complexity

The bank resolution framework was a pillar of the European banking union and consisted of the Bank Recovery and Resolution Directive (*Directive 2014/59/EU (BRRD)*, 2014) and the Single Resolution Mechanism (*Regulation 806/2014/EU (SRM)*, 2014) complemented by institutions such as the Single Resolution Board that are part of the process. The BRRD was aimed at less-significant banks that were supervised by national competent authorities and, as a Directive, was transposed into the respective domestic set of rules for banks. The SRM was a Regulation and

applied to those banks that were supervised by the ECB as part of the Single Supervisory Mechanism (SSM) for the largest and systemically most important banks in the Eurozone and participating member states. I will mostly focus on the BRRD first, the SRM is similar especially with regard to the rules examined here.¹⁰⁵

This case mostly refers to the direct resolution issues at stake: the precautions to support orderly resolution including the bail-in procedure, the trigger for resolution, and intervention opportunities for states to stop resolution.

The respective precautions, meaning eligible debt instruments that can be used for restructuring or resolution, are close to previously discussed capital requirements. In fact, they could be regarded as some second- or third-tier capital requirements that could be quickly turned into capital if the actual capital requirements do not suffice to cover losses. Both a requirement for such bond issuance and a liability-cascade for the bail-in in case of crisis are needed to ensure that resolution and restructuring can work orderly without financial government support. An unclear regime directly increases costs for states in case of resolution and indirectly through hurting the credibility of the regime. For a bank, it is more expensive to give out junior bonds for refinancing under a credible resolution regime as they have to price in the risk of loss that is higher than for senior bonds or deposits. This certainly also reduces the bank's ability to give out loans as funding becomes more expensive but it makes the industry safer as argued before. This is the basic trade-off faced by regulators that they might interpret differently. A clear distribution of responsibilities for triggering resolution should also be part of a credible regime that convinces banks and markets to acknowledge the risk of resolution and, thus, increase financial stability *ex ante*. Yet, this might result in a loss of control for national regulators if this is thoroughly regulated on the international/European level.

A resolution of a bank almost always comes with pain for the respective economy and that makes it less likely that governments will actually intervene in the moment of crisis. For example, Zingales (2017) argued that bank troubles in Italy in 2017 that mostly affected regional banks had a great impact on growth in the respective region. Thus, it might be better for governments to

¹⁰⁵ The discussion also included how to finance a resolution of a bank in case this needs more money than available to the bank: the question of resolution funds. This topic was of great importance to states and is part of the resolution package. And while financing of resolution is somewhat important for the reliability of such rules, the sources of that funding are only of remote interest for banks, which are the subjects of regulation I am interested in. Therefore, I will not go deeper into the extensive discussions related to this topic if not necessary to explain more direct features of the resolution regime.

intervene and save banks in the short run. The negative effects of such credibility-harming behavior would only show in the long run as markets and banks would expect bail-outs and increase risk-taking.

Thus, a credible and well-organized resolution framework is a long-run investment and it might fail if it is not designed well. Hence, one would assume that European countries that just experienced one of the most severe periods of financial market turmoil would create such a coherent and credible framework.

Yet, the mentioned important features of a resolution regime already hint at the problems that might emerge. According to the model, states might resolve the trade-offs differently and it might be worthwhile to introduce some leeway into the, in this case, European rules such that countries can react differently to troubles in their banking sector. This would, of course, come at a cost as the framework would become less thorough – or more complex. The model would predict that states would try to find a balance between adjusting common regulation to their needs and the associated costs of moving away from unified common regulation. This would essentially mean that banks are potentially treated differently under the same framework based on their location or other factors, which harms credibility of the framework.

It seems like the European resolution framework was such a case where complexity emerged to reconcile diverging interests. If this case were to support the general claim of the model, hypothesis H1, it would show a direct path from diverging preferences to a complex framework. A central planner, European institutions, would also show tolerance for complexity if H2 was supported by the case. So, I am looking for direct processes that show a relationship between countries' preferences and a complex outcome.

A counterfactual would be a complex outcome that could not be traced back to state preferences. This might happen through a multitude of channels including the proposals by the Commission or sudden emergences of new rules that cannot be related to previously stated preferences. This again relates to all instances where the process predicted by the model does not seem to be followed.¹⁰⁶

¹⁰⁶ As argued before, the alternative argument for the emergence of complexity is not entirely clear. Regulatory capture theory and similar strands of literature would examine whether there was involvement of lobbyists and then trace back costly outcomes to their intervention. This here is basically the opposite, as I trace complexity back to state preferences. At the same time, I have to be vigilant whether other

Based on Howarth & Quaglia's (2016b) examination, I find that a partial failure to create a coherent and credible framework on resolution in the EU can be traced back to structural differences across European countries and might be closer to an optimal framework that balances costs and benefits of complexity – given the preferences of states at the time – than one might expect. Of course, this only applies if we take potential negative effects from stricter regulation into account and weigh them against the problems associated with such a framework. Just as the model does.

IV.12.2 The clash of preferences and emergence of complexity

Howarth & Quaglia (2016b) extensively discuss the preferences of member states regarding the design of the European resolution framework and also how this was resolved. This refers to the two main pieces of the resolution framework, the BRRD and the SRM. Their work is quite similar to my efforts in the first two cases and spares me the work of diving deep into preferences of states and the evolution of rules. I will just reinterpret their main results with regard to the model.

According to them, there were multiple factors at play that determined the stance of national governments regarding the framework, which is in line with my theory. These factors included the structure of the respective banking system,¹⁰⁷ the respective importance of large, cross-border banks, expected stability of the domestic banking system, and ability to finance bank restructurings. The exact preferences of a number of influential European states can be found in Howarth & Quaglia's book but only the relationship between such preferences and the regulatory outcomes is of interest here.¹⁰⁸

With regard to the BRRD they note that there was a substantial division across member states on how much discretion national regulators should have with regard to the bail-in mechanism. This means that some states (notably the UK and France) wanted to have flexibility in how to treat bondholders of struggling banks. The other side (mostly northern countries including Germany) wanted a clear liability cascade. So, this is about how to treat banks and their stakeholders in

explanations – such as regulatory capture – might yield the same results, which would then be problematic for the power of the model.

¹⁰⁷ Howarth & Quaglia (2016b) identify this as a main reason for diverging preferences.

¹⁰⁸ I disregard many issues here that were controversial as they do not directly contribute to the scope of my investigation. This includes the financing of resolution through resolution funds and their setup as well as whether the resolution framework required a change of the EU treaties for the SRM. This plays into the matter but would go too far. Yet, some complexity might actually stem from attempts to avoid a treaty change.

national contexts and the flexibility countries were basically arguing for what I call complexity: greater variance across countries in treatment of regulated subjects. Thus, we now operate on a meta-level: it is not about two regulatory concepts anymore but the countries are already arguing about how complex the compromise can be.¹⁰⁹

The eventual compromise was – as one could expect – complex in the sense of the model: national regulators could exempt liabilities from being used for restructuring based on certain (vague) criteria. A lower boundary was weaved into the framework for these exemptions to be applied. A minimum amount of liabilities and own funds had to be used according to the common bail-in mechanism; only the remaining creditors could be exempted. Thus, the BRRD clearly became more complex than an alternative simple solution and banks and their stakeholders could expect to be spared a bail-in with some probability. This story gives further support to hypothesis H1.

A similar pattern can be observed for the Single Resolution Mechanism (*Regulation 806/2014/EU*, 2014), which was the regulation version of the BRRD and whose important goal was to regulate the resolution of entities supervised by the ECB under the Single Supervisory Mechanism (see case II), which applies to the largest and most significant institutions.¹¹⁰ The Commission argued in its first proposal (European Commission, 2013) that a thorough, independent regulation was necessary to empower the ECB to efficiently supervise such banks even in troubling times without interference by national resolution authorities. This SRM would have been a major transfer of power to the European level.

This also showed in the negotiation of the SRM as traced by Howarth & Quaglia (2016b). Germany acted as one of the countries that wanted to reduce the transfer of power to the European level. For example, the trigger for resolution was supposed to be pulled by the Commission, which was then changed back and forth between the ECB, the Commission, states, and a newly created Single Resolution Board (SRB).¹¹¹ A compromise among countries was reached that the SRB should be

¹⁰⁹ This simply leaves out the one step where the flexibility countries would formulate their ideas of how to treat banking resolution and restructuring in their national preferences and goes directly to the complex solution. Even if the eventual goal of France and the UK would have been to achieve exactly this flexibility, this would mean that they might not be sure about their banking systems and would model-wise represent a continuum of preferences. This would just complicate things but not change the basics.

¹¹⁰ According to Howarth & Quaglia (2016b), the plan was that the SRM was to be applied to all banks but German intervention prevented that. National authorities still had much say about BRRD banks.

¹¹¹ Consisting of a director, four members, and representatives of all participating resolution authorities (Howarth & Quaglia, 2016b).

able to trigger resolution upon notification by the ECB but with veto powers for the Council as explained by Howarth & Quaglia. This made the process subject to political interference.

And here we find another example of central planner intervention as multiple European bodies demanded a reduction of the complexity associated with such a compromise. According to Howarth & Quaglia (2016b), the ECB and the Commission were driving forces behind such a call for less complexity and more centralization (which might also have to do with power struggles). A group of Members of the European Parliament also demanded more centralization and explicitly based their argument on equal treatment of banks across the EU according to Howarth & Quaglia. These concerns resonate very closely with my definition of complexity and support hypothesis H2 as the central planners simply had a different assessment of how much flexibility was needed but did not want to eliminate it completely.

The eventual compromise was to reduce complexity by giving power to trigger resolution to the ECB (through the Single Supervisory Board of the Single Supervisory Mechanism (SSM)) after notification by the SRB (which included national resolution authorities), which could also act if the ECB refused to do so. This is described as a “messy compromise” by Howarth & Quaglia (2016b) but still is less complex than the Council’s solution as it ensured relatively equal treatment of banks when triggered. Some similar compromises were found with regard to the resolution fund itself and access to it. There is little hint that some European lobbyists were decisively involved in this but the most convincing story remains the obvious differences across member states and the European bodies.

IV.12.3 Precautionary recapitalization

One point that is not covered in much detail by Howarth & Quaglia’s examination is precautionary recapitalization, which refers to government bail-outs for banks that get discretionally exempt from resolution but are supposed to be restructured by using state support (in exchange for shares). This reminds of the great bank saving missions during the Financial Crisis, which were supposed to be ended with such a resolution regime. A precautionary recapitalization is a loophole in this regime to allow for some kind of bail-outs of banks that are not completely insolvent. Remember that the possibility of bail-outs has an effect on banks’ risk-taking behavior and that the resolution regime was supposed to address that.

This deliberate loophole in the resolution regime was not part of the first draft of the BRRD by the Commission (European Commission, 2012). Yet, it was abundantly clear that some countries' banking systems were not entirely stable or prepared for a rigid resolution regime. Not all were starting from scratch in terms of stakeholders being able to accommodate to new circumstances. But this was the central mechanism of how this resolution regime was supposed to work: share- and stakeholders should contribute to more stability through internalizing all potential costs of a failure. This would either make risky banks' refinancing more expensive (as investments would be riskier as governments would not bail them out) or banks would reduce risk-taking. The existence and the use of such a bail-out provision would counter such an effect and would constitute the costly complexity that I investigate.

Yet, the final version of the BRRD (*Directive 2014/59/EU*, 2014) included the precautionary recapitalization provision in Article 32(4).¹¹² This rule included a strong role for resolution authorities but also the Commission, which had to approve such recapitalizations through direct state aid rules as usual in the EU. Even though the Commission had such a strong role the existence of precautionary recapitalization introduces complexity as it gives discretion to countries. This increases their ability to intervene based on short-term considerations as outline before.

It is difficult to trace directly how this rule was negotiated into the Directive. Involved interviewees did not want to talk much about its emergence and how this is related to national preferences. This shows how controversial the matter was at the time of my interviews. However, the revealed preferences from when the provision was actually used is revealing state preferences with regard to that.

In a previous piece (Traut, 2018), I explored preferences and their roots with regard to precautionary recapitalization for Germany and Italy. This was shortly after the fourth-largest Italian lender, Banca Monte dei Paschi di Siena (MPS), was saved through such a precautionary recapitalization move. This had happened before to Greek banks and was denied by the Commission for other, smaller Italian banks.

German regulators and politicians were outraged about this blow to the credibility of the resolution mechanism and had hoped for the Commission to prohibit it (see, e.g. Financial Times, 2017). This clearly shows the German preference for a restrictive bail-out regime in the BRRD.

¹¹² The same provision was also part of Article 18 of the Regulation setting up the SRM but it was included from the beginning as the BRRD proposals were drafted earlier.

This might not mean that they completely refused the idea of precautionary recapitalization but were in favor of stricter rules (at the time, which was fairly close to when the BRRD was agreed).

The Italian side, in contrast, was pushing for such recapitalizations to be allowed. Probably they would have preferred not to be restrained by the Commission as they also tried to save other banks, which was denied.

Given these revealed preferences, it is likely that these two actors formed some extremes of the argument about recapitalization. In my article, I trace this divergence back to Italy and Germany being on different stages of a crisis cycle. Germany had bailed out its banks with vast amounts of taxpayer money during the Financial Crisis as its banking system was heavily affected by the crisis (e.g., the previously discussed *Landesbanken* were part of the problem). This was done through guarantees but importantly also through capital injections that come close to what is regulated in the BRRD. As a result, the German banking system was reset and could start from scratch (at least to some extent).

In contrast, Italy prior to the Financial Crisis had a relatively prudent banking supervision regime. The Italian government mostly intervened with guarantees for banks during the Financial Crisis but injected little capital. After the crisis, many of their banks were in a weaker position than German ones as they were not bailed-out during the crisis. The following economic crisis in Italy made things worse and the banking system experienced a slow but long crisis and had not recovered when the BRRD was implemented. In addition to that, Italy had a tradition of retail investment into banks and these investors could not simply shift their assets into other investments that quickly (if at all). As a result of better banking supervision, Italy was worse off in some regards. In such a situation, it would be strange to introduce rules that make things even worse through denying even prospects of recapitalization to struggling banks. The precaution clause was a loophole to get around that and the Commission involvement – while probably also important and general EU state aid rules – ensured that this would not be a fallback to the old regime where states could simply bail out banks. This seems like another case of complexity as a solution mechanism and gives support to the mechanisms described by the model.

IV.12.3.1 Precautionary recapitalization as a case for intertemporal changes?

The precautionary recapitalization approach of the BRRD was contested before and after it was applied. Some argued that the relationship between state-aid rules (which is how the Commission

could intervene in attempts to recapitalize) and rescue attempts by states was blurry (Hellwig, 2017). Véron (2017) saw recapitalization as an important transitional arrangement. Overall precautionary recapitalization was seen as a necessary tool but with need for more certainty and quicker decision-making procedures. This appeared to be the general sentiment in Brussels. On the other hand, there seemed to be much dissatisfaction especially with the recapitalization of MPS. The German Council of Economic Experts demanded stricter rules for recapitalizations to prevent that they would be used as hidden bail-outs (Sachverständigenrat (SVR), 2017). A Franco-German group of economists also encouraged changes in the BRRD to make sure that a recapitalized bank was not beyond repair. They actually demand a clear requirement for testing the quality of assets before money can flow if it is not an emergency (Bénassy-Quéré et al., 2018). These two papers were also widely discussed in German politics, at least, and led to demands to strengthen the hurdles to apply recapitalization rules.

This means that the rules were contested in the course of their use and this could have given momentum to changes in regulations. Conditions from 2017 (when MPS was saved) were perfect for a shift in preferences: Germany had seen that the BRRD had fundamental loopholes that were also used, Italy saw that the framework was costly for them as it prevented them from saving some banks and precautionary recapitalization was a struggle. Other countries either with concerns about weak resolution signals or with potentially failing banks could have joined a call for reform. It does not seem as if this existing set of rules was vastly popular on either side.

This setting is a perfect foundation for a development as described by the model and hypothesis H3. The last greater crisis was fading and daily political struggles took over. While most likely all European governments would have supported a call to end resolution problems in 2009, daily politics meant that more and more non-crisis-times views could gain ground. Moral hazard behavior by banks would only become a problem in the long run. And as a (partially) credible resolution regime increases funding costs for banks and even insecurity about expected bail-outs could have such effects, especially the pro-recapitalization side could have tried to increase their room for maneuvering. This would mean more complexity in the sense of the model could emerge here as this is a setting that the model describes.

However, this did not happen in the years since MPS was saved and no major revision of precautionary recapitalization has taken place between 2017 and 2020.

The simple result from this case study so far is that, again, H1 and H2 are supported but H3, the intertemporal prediction, is not. However, the evaluation of H3 here was only a corollary. In the next and last sub-case, I will focus on this H3 in a regulation that was changed after the BRRD was set up and where opportunity existed to introduce more complexity in regulation: the minimum requirement for own funds and eligible liabilities (MREL) in the BRRD.

I will explore what the model would predict with regard to the reform of MREL. Then, I will apply that to the case and see how well the model can explain what actually happened. Hence, this is again a plausibility check whether the model has explanatory power here.

IV.12.4 The intertemporal case: model predictions

The underlying assumption of the model is that some costs of complexity – especially those related to financial stability – are based on expectations. Such expectations might change over time if the respective costly event happened some time ago and under different circumstances (the ‘This time is different’-argument from Reinhart & Rogoff’s (2009) book) which would then advance the regulatory cycle up to a point where the regime would get unstable again. This financial cycles-literature usually looks at much longer periods than that of the setup of the European resolution regime and its overhaul. But for an empirical examination these longer terms also mean that much more noise has to be dealt with. This particularly constraints qualitative empirical examinations to cases where regulation changes over time but other circumstances remain relatively stable.

Corollary 1 as well as Proposition 3 and, thus, hypothesis H3¹¹³ are built on such long-run cases and the general idea of financial cycles-literature. They might add to explaining the micro-determinants of such cycles. In the model, expectations shift over time after a major regulatory overhaul and the assumption is that the expected costs from complexity – at least those based on the resulting instability – decrease through such a change in expectations (i.e., regulators forget about, or rather discount, the previous struggles and focus more on the short run growth effects of regulation). External changes of expectations (e.g., through long periods of stability) would have an effect on the outcomes of regulatory decisions in terms of more exceptions, more

¹¹³ This corollary refers to proposition 3 of the model, which only transfers the static model into an intertemporal world and shows that it also applies if regulators have to care about the future. All three propositions were translated into hypotheses H1 and H2. The corollary now makes additional assumptions about the nature of changes throughout the intertemporal process (which proposition 3 does not). These predictions – transformed into assumptions – are now tested here.

discretion – in short: more complexity – as the (short-term) gains from such exemptions grow relative to the decreasing expected costs from complexity.

Pagliari & Wilf (2020) showed that usually regulation is evolving gradually and mostly based on previous accords and rules – except for the major crisis event of 2007-9 that yielded new rules. Hypothesis H3 would fit well into such a narrative: major crises are a starting point for setting up regulation and then it is watered down through complexity over time until the next crisis event, which reveals the costs of complexity again. Hence, the complexity theory would describe a microeconomic link between the financial cycle results and the actual rulemaking. This model idea is, of course, based on the assumption that expected costs of complexity would decrease in the long run (or that preferences would change in that direction).

An investigation that would support these claims would have to look at changes in regulatory stringency. Revisions of older rules would have to yield more complex outcomes with more exceptions and additional discretion for banks or regulators. If one could observe that, this would have to be traced back to a change in preferences (instead of other factors), which would probably be the hardest part of the exercise.

However, any empirical observation of this mechanism faces one great obstacle: noise. As the model was designed with the long-run in mind, one would have to compare, for example, Basel I to Basel II. This, however, would mean comparing two different worlds. One would be dominated by the cold war and four equally powerful nations in Europe while the other just experiences the rise of China and the introduction of the Euro. This means that such long run investigations are all but impossible to conduct in a qualitative way as it would be hard to account for the noise.

The BRRD and its overhaul with regard to MREL might offer a chance to evaluate such developments in a shorter time frame with less disruptions, which is why I will go through that in the following. This is one of the rare cases where I could find a traceable overhaul of a rule that took place in a rather similar environment as the initial rule. This case is a likely candidate to find changes in complexity of regulation over time that could be explained by changes in expectations. I will motivate that in the following. Yet, the bottom line here is that this case cannot support hypothesis H3 or corollary 1.

IV.12.5 The real intertemporal case

The case of minimum requirements for eligible liabilities as precautions for bail-ins, MREL, is interesting for my investigation as they were introduced with the BRRD in 2014 and then overhauled in 2017 to 2019 – a period with a manageable amount of global developments that could disrupt the analysis. The reform of MREL (into MREL2) was also mentioned by interviewees (Interview_Regulator#12_2019, Interview_Regulator#23_2020) as a fitting example of what the model predicts. This was meant in the sense of common rules in which states included special provisions and exceptions to suit their own preferences, which heavily increased complexity. One regulator even claimed that regulators themselves would not necessarily understand the entirety of the implications of the new framework. This directly corresponds with complexity in the sense of the model as interpretations of rules or, even if the European Banking Authority (EBA) prescribes an interpretation, use of exceptions might differ for banks with similar portfolios.

Thus, this overhaul of the BRRD – BRRD II, which included MREL2 – could actually show some intertemporal developments that correspond to the model.¹¹⁴ I investigate whether this was the case based on the actual legal texts and find that there actually was an increase in such exceptions (and, thus, complexity) over time. These exceptions sometimes are that explicit that they can be related to some states' preferences.

The first MREL also left quite some areas open to be decided by the EBA and the Commission, which often resulted in Europe-wide consistent interpretations of unclear rules, which reduces room for maneuvering for national regulators to a certain extent. It might be tempting to conclude that these relatively coherent rules resulted in state action to weaken them in MREL2 and to bring them closer to their preferred levels of regulation. Yet, things are more complicated than this and such an argument would be an exaggeration of the facts available. This is because the increase in complexity in MREL2 coincides with complexity-reducing measures that followed an agreement of the G20 Financial Stability Board. Eventually, I cannot clearly show increasing complexity here as the new safeguards – introduced as a result of the G20 agreement – actually reduced complexity at other ends. So, there are ambivalent developments that prevent credible conclusions from this case. An increase in the use of exceptions in a stricter accord corresponds to hypotheses H1 and

¹¹⁴ Again, this applies to the Directive and the Regulation level, I focus on the Directive.

maybe H2 but does not provide evidence for intertemporal effects of deteriorating expected costs from complexity as in H3.

I will first go through the case of MREL and MREL2 and try to make the case for increased complexity over time as a result of changing preferences. This is already difficult as the preferences of states on that are not necessarily obvious. After that, I will show how the argument can be challenged which eventually crushes the reliability of the case as one that supports the intertemporal complexity hypothesis H3.

IV.12.5.1 The increase of complexity from MREL to MREL2

The BRRD (*Directive 2014/59/EU, 2014*)¹¹⁵ included a Minimum Requirement for Own Funds and Eligible Liabilities (MREL; mostly Article 45) that was supposed to ensure that enough sources of capital for bail-ins would be available when a bank had to go into resolution or restructuring. This means that this is another layer to address losses of failing banks before the taxpayer has to step in. The first firewall are the hard regulatory capital requirements that a bank has to fulfil including buffers that would pay for losses. Roughly said, if (expected) losses, e.g., through non-performing loans, exceed these buffers, a bank would be bankrupt and either go down in chaos or be saved by the government (which would be more likely as short run costs might be higher in case of a too-big-to-fail bank). This can be avoided or mitigated if one can increase capital of the bank by using junior liabilities for a bail-in. This means that liabilities are being transformed into capital, which can, of course, only be done with certain types of investments.¹¹⁶ Banks are not particularly keen on giving out such liabilities in comparison to other sources of refinancing as they would have to pay a premium for the bail-in risk. This increases refinancing costs. Market participants would also put more control on the respective bank if their investments were at stake.

The MREL sets general rules for what kind of liabilities can be regarded as able to serve as bail-in liabilities and how much and what type of such liabilities banks have to hold. These rules remained relatively general as the EU waited for a decision on the international (i.e. G20) level on how to harmonize such requirements (*Directive 2014/59/EU, 2014, p. 206*). They also left much room for national particularities as there were no fixed minimum ratios for eligible liabilities (except for the normal capital requirements) but set requirements for banks individually based on

¹¹⁵ There was a negotiation process of the first BRRD, of course, but I refrain from going through this as the focus here is on the switch between BRRD and BRRD II.

¹¹⁶ For example, deposits are not feasible for that.

supervisory assessments (see Deutsche Bundesbank, 2016). While this sounds like a very complex solution in the sense that each bank is treated differently, this misses parts of the picture. The basis for such assessments was pretty much harmonized through technical regulatory standards, basically qualitative criteria for such assessments, suggested by the EBA and introduced through delegated act by the Commission (this was described in the Bundesbank memo).¹¹⁷ This means that there was some room for maneuvering for national regulators but the broader lines were set in a harmonized way even though no hard quantitative boundaries were set. The regulatory corridor appeared to be relatively narrow. This general pattern is in line with what we saw before and the basic predictions of the model that complexity emerges within boundaries when states with different preferences try to harmonize their rules (and what central authorities do when they have to decide about it). This usual arrangement that we observed so far was that some discretion was possible but it was mostly restrained to a corridor by rules – which are here represented by the standards.

The important development for the case now is that the BRRD was reformed soon after it took effect and this included the MREL (*Directive 2019/879/EU Amending Directive 2014/59/EU (BRRD II)*, 2019). At a first glance, this MREL2 provision extended the corridor in which states had discretion, which would be a clear indication of increased complexity, especially through additional exceptions and other forms of complexity.

The former MREL article 45 of the BRRD was replaced by a number of articles (45, 45a-m) in the overhaul toward BRRD II/MREL2. This alone did increase the number of pages by a large margin and would be counted as increased complexity when employing this simple measure. This would be too simplistic as the previous MREL regulations left much to the EBA and the Commission to be determined as technical standards, while some of this was now moved into the directive. However, this new MREL2 still is full of exceptions and special rules that one regulator described as such a complicated framework that it could easily result in problems. Part of this are exceptions and special rules that increase complexity in the sense of the model. These special rules include particular treatments of subsidiaries and how their MREL could be covered (e.g., through guarantees), for example. This might be seen as an increase in complexity as a subsidiary and a very similar independent institution could face different requirements. Outright exceptions, for example, come with Article 45g, which allows resolution authorities to exempt institutions attached to a central body from requirements, which is clearly aimed at savings and cooperative

¹¹⁷ Remember, this great discretionary influence for common European bodies was heavily contested in the implementation of Basel III in Europe and with regard to precautionary recapitalization.

banks and states where they play an important role. These are just examples of the general increase in complexity here. Overall, the new rules become vastly more complex as interviewees argued and the actual legal texts show. The old MREL including the EBA interpretations would be made less stringent and the corridor in which some banks' requirements would be calculated would widen.

This development over a few years seems to support the claim of hypothesis H3 that preferences shift and that the expected implicit costs of complexity through exceptions and discretion would decrease, which would result in more complexity. There is little else that would explain such a shift as the period of 2014-2019 did not see this many events that could have a direct shifting effect on regulatory preferences.

To make this clear, this is still a long shot and an analysis of preferences and probably even how they changed would be necessary to determine whether the model really explains this shift. In the next paragraphs, I will show why this might rather be a case of newly formed preferences in a new situation than an intertemporal shift, which renders a deeper analysis obsolete.

IV.12.5.2 The reason behind changes in MREL

The obvious increase in complexity from MREL to MREL2 is not necessarily a result of shifting preferences in the sense of H3. One crucial fact that has been left out of the discussion so far is where the initiative for reforming the BRRD (and, thus, MREL) came from: the G20 Financial Stability Board (FSB) agreement on Total Loss Absorbing Capacity (TLAC) that was under negotiation for years and which was published after the implementation of the BRRD in 2015 (Financial Stability Board, 2015). The TLAC agreement is very close to the MREL but actually included quantitative quotas for such bail-in-liabilities. This referred to globally important institutions, not to every institution. As we already saw in Basel III, which was also meant for larger institutions, and its implementation, the EU tried to translate this into rules for all banks. These ratios were not too ambitious according to regulators but required TLACs (or eligible liabilities) of up to 18% of risk-weighted assets and 6.75% based on leverage after an introduction period (Deutsche Bundesbank, 2016). This is a reduction of the room for maneuvering for regulators that want to give advantages to, for example, very safe banks. Previously they were only bound by technical standards but now the corridor narrowed.

The transposition of the TLAC into European law meant that MREL had to be reformed and that was decisive for starting the process towards MREL2. MREL2 applied to all to European banks through the BRRD II and that made things complicated.

With the introduction of quotas that had to be met, MREL moved from qualitative supervisory requirements that one could put into pillar 2 of the Basel universe into hard pillar 1 requirements. This is not an evolution of the former rules but it is closer to what was examined in case II with the transposition of Basel III into European law. The exceptions described before seem very much like a move described by the static model to reconcile diverging interests when introducing new rules, not like something that evolved over time as predicted by the model and hypothesis H3. Even if one would claim that the move from MREL to MREL2 was an evolution, it would not be clear whether it would be an increase in complexity (for reasons stated above) or a decrease in complexity as the general quotas were introduced that narrowed the corridor for national supervisors to determine regulatory burden for banks. Hence, there is a clear alternative explanation for the change in complexity and this case cannot support H3 as a result.

IV.12.6 Discussion of results and summary

While the whole case of the European resolution regime can most likely be counted as support for the fundamental ideas of the model, it cannot support the intertemporal hypothesis H3. We see in the regulations regarding resolution and restructuring that national discretions and generally complexity was introduced– for example, in the case of precautionary recapitalization. Due to previous work by Howarth & Quaglia (2016b), we can identify the preferences of states and regulators with regard to many parts of the European resolution regime. The exceptions and other complexity-enhancing features of the European framework can be traced back to this. So, this case serves well as further support of the claim that complexity is a solution mechanism to diverging state interests.

However, the original purpose of this whole exercise was to establish the foundation for an intertemporal examination of the regulatory process to support the hypothesis of intertemporal emergence of regulatory complexity. While especially the switch in bail-in regimes in the European Union might look like a promising case for that – many exceptions and discretions were introduced in the overhaul – a closer look contradicts that. The overhaul was part of a greater move toward international regulatory harmonization and the increase in exceptions was a response to that. It is not even clear whether complexity increased or not, probably not. Hence,

the case cannot support hypothesis H3 that complexity increases over time through a change in preferences of regulators or their expected costs from complexity.

This is not entirely surprising as the MREL overhaul took place within a short period of time. One might even see MREL as one step in a singular negotiation process that ended with MREL2. The intertemporal part of the model as well as hypothesis H3 were constructed with longer time periods in mind – rather Basel I to Basel II than MREL to MREL2. This was roughly based on regulatory cycles literature. Resolving the trade-off between having a relatively constant external environment¹¹⁸ and finding regulations that evolved over time in the sense of the model might be impossible – at least it was for me when looking for examples. This being said, it is entirely possible that the intertemporal part of the model is simply not true and just a thought experiment.

Generally, if H3 was true at all, this would probably show in long-run examinations but there are so many factors present that this is difficult to pin down – e.g., the greater scope of Basel II, which has contributed to its complexity too.

It might be possible to examine the evolution of regulations over time with other methodologies but the power of case studies is limited here. Thus, it remains to be concluded that this empirical examination cannot support H3.

¹¹⁸ One might even contest that with regard to MREL, as 2016 was a year full of changes and an emerging Italian banking crisis.

IV.13 General results from interviews

The interviews with regulators from Europe and other stakeholders in multinational banking regulation generally support the results from the case studies. This is not too surprising as cases were mostly selected based on hints by interview partners. In this overview, I will focus on the broader picture and will not get into particular cases.

A common theme was that regulators see a trade-off between costly complexity in the sense of the model and flexibility. This was particularly the case for regulators that could be perceived as central planners, which is closely aligned with the model. They often saw more coherent regulation as more important the more integrated markets would get as such integration opens more avenues for regulatory arbitrage if rules are not coherent enough (Interview_Regulator#12_2019; Interview_Regulator#21_2020). It was also mentioned repeatedly that negotiations would take more time the more prescriptive the initial proposal was (Interview_Regulator#12_2019) and the further apart initial preferences were. Regulators 21 and 22 referred to national discretions as an explicit solution mechanism for such cases. This very much reinforces the support for hypothesis H1.

One point that did not yield a clear answer was how an optimal level of regulatory complexity might be achieved. It was clearly stated by one regulator (Interview_Regulator#13_2019) that both national regulators and European ones would introduce discretions based on the variety of banking systems in the EU. This was supported by other regulators. This seems to reinforce previous assessments of hypotheses H2 that also was confirmed in the in-depth case studies.

However, there were contrasting answers regarding the tools used in European regulation. While some saw a switch from Directives into Regulations (CRD to CRR) as a move to more harmonization (Interview_Regulator#12_2019) and necessary for good governance of the common market, others saw this rather as a technicality and strongly refused any suggestion that Directives could be used to increase regulatory corridors through different implementations in member states (Interview_Regulator#23_2020).

This is not directly related to a hypothesis but shows that it sometimes even seemed unclear whether a certain measure or tool used in regulation affects complexity.

One regulator also made the case for intertemporal effects as predicted by the model (Interview_Regulator#22_2020): complexity might increase over time as national peculiarities become more important vis-à-vis the fading memory of crises. In contrast, more harmonization would take place directly after crises. This seems to support hypothesis H3 (which was not supported by case studies) but this one data point cannot provide reliable evidence without support by an actual case. Another regulator gave a plausible reason why renegotiations might not happen in the short to medium run: states might achieve some goals in the respective negotiations that they want to lock in, especially the more hawkish ones. They might simply refuse to open negotiations again even if they are less concerned about complexity than before as they might fear that the entire regulation might get weaker (Interview_Regulator#31_2020). Their dissatisfaction with the existing accord would have to cross a certain threshold to allow for renegotiation.

Lastly, the conversations helped with regard to assessing lobbying on the international stage from the view of practitioners. A central piece of support for the model assumptions comes from one regulator who argued that lobbyists play a big role in Brussels but in pairs with states (Interview_Regulator#12_2019). This was reinforced by others that argue that lobbyists are more powerful on the national level as their goals can only be achieved if they are aligned with that of states – both in the EU and in Basel (Interview_Regulator#11_2019; Interview_Regulator#21_2020; Interview_Regulator#31_2020). Another regulator explicitly said that they could not remember any occasion where influential interest groups actually captured a process that this person was involved in (Interview_Regulator#24_2020). This seems coherent with the theoretical assumption that preferences are formed in some sort of black box in the countries (which allows for industry influence) but that lobbyists play a not so important role in the formation of complexity on the international level.

Of course, this evidence comes from few sources, who are all regulators or supervisors. One other actor argued that lobby influence plays an important role on all stages (Interview_Other#13_2019). But this interview partner also rather referred to the direct weakening of rules, which is not subject of this investigation. A common theme was that there are industry interests but that they often enter accords through states, which is perfectly in line with the model and seems to support the approach of treating states as the central actors on the international stage and not some lobby organizations.

In summary, the interviews helped to choose cases to investigate the matter of complexity formation in international banking regulation and they also further support at least the first two hypotheses derived from the model: that regulatory corridors are a solution mechanism and the social/central planners would also introduce such corridors but to a different extent.

IV.14 Summary

Regulatory corridors serve as solution mechanisms for states to resolve disputes over regulatory harmonization. The main result of the empirical examination is that this theoretical claim from the model can be supported by evidence from regulatory harmonization negotiations on the international and European stage. The cases evaluated here had different focusses but all show that states translated diverging preferences into regulatory sets when trying to harmonize their approach. This means that they left room for maneuvering in the accords: either directly in the respective international rules such that banks had more choice how they would be regulated or indirectly by giving regulators room to implement or interpret rules differently. An important tool for the latter was moving rules from prescribing hard capital requirements (pillar 1 approach) into guidelines for supervision for mostly national supervisors (pillar 2 approach).

The general research strategy here was to conduct separate case studies of regulatory harmonization attempts that were likely to exhibit complexity, the dependent variable of this whole investigation. These case studies were founded on expert interviews, which also gave first hints at which cases might be worth pursuing, and thorough process tracing through negotiation documents. Countries preferences were examined carefully in each case as this is the explanatory variable suggested by the model. A possible counterfactual to the claims of the model is that complexity stems from lobby influence, which is examined in detail in case I while the other cases show a clear path from states' positions towards a complex solution, which renders such an examination unnecessary – particularly as the counterfactual is rejected in the first case.

Case I showed how a regulatory corridor emerged in the international arena of the Basel Committee on Banking Supervision. Operational risk treatment for banks was contested between a continental European and an Anglo-American coalition. The former wanted to introduce relatively strict rules to calculate capital precautions for such risk that were supposed to apply to all banks. These were rather located in the pillar 1 part of Basel II. The US-UK coalition rather preferred an approach where operational risk was covered through supervision – pillar 2. The eventual solution was to combine the two sets of preferences and to set up a three-tier system of approaches where banks could choose from a menu of ways to calculate their capital requirements. They could either choose more standardized, indicator-based approaches that would be relatively simple to calculate but not flexible or they could qualify for an 'advanced' approach where they had to set up a proper risk management for operational risks, which was then supervised by public authorities. Even a floor for this latter approach was abolished, which

– despite being officially located in pillar 1 – makes this a pure supervisory issue as supervisors essentially assessed banks' risk modelling without setting hard capital requirements.

The eventual compromise clearly was a regulatory corridor: the same bank could face vastly different regulatory regimes based on both its choice of risk regulation and the preferences of its regulator if it went for the advanced approach. A comparison between the position of international lobby positions with state positions and the eventual compromise suggests that this complex result was the result of state negotiations instead of regulatory capture on the international stage as states had more extreme positions than international lobby groups.

Case I exhibits important points on when and how the model can explain regulatory corridors as the result of international negotiations. A key aspect, especially when comparing this Basel II case with Basel I, is the absence of a winning coalition that could introduce regulation that suits its preferences. Other necessary conditions were diverging interests of negotiation partners but a willingness to reach a harmonization accord. Thus, there must have been a trade-off for states between achieving harmonization and remaining flexible to shape regulation based on their own preferences. In these cases, regulatory corridors can be a solution even if they come at the costs of complexity. That such costs are a real issue has been motivated in this chapter as well.

The implementation of Basel III in European Union law then makes for case II. This subject of investigation is much broader than a single measure in Basel II, which was examined in case I. Such a wider focus allows for more holistic investigation of how regulation is negotiated among states. Furthermore, this case moves from the world of Basel, which is more about unenforceable soft law, into the world of European hard law. The two factors combined make for a case that is not as detailed as case I with regard to particular aspects but provides a glance into the making of binding rules that states themselves cannot evade easily. The evaluated rules yield explicit boundaries for states to regulate banks: the regulatory corridor has clear walls – or they are explicitly negotiated away as in the case of prudential requirements. The latter were moved from a highly prescriptive proposal to a minimum requirement with states being able to diverge upwards as much as they want, which widened the respective corridor. In other cases, national regulators and supervisors got explicit discretion to implement harmonized rules differently (for example, regarding risk buffers and the calculation of regulatory capital in conglomerates of banks and insurers) or longer implementation periods than envisaged. While there are some sub-cases in which no regulatory corridors occur despite all prerequisites being fulfilled, most parts show

the emergence of complexity during negotiations between states. Such complexity can be directly traced back to states' preferences, which supports the line of argument of the model.

The cases where regulatory corridors do not emerge show an important limitation of the model: complexity can only emerge if it is feasible to have a complex solution at all. A measure like the leverage ratio, which is supposed to reduce complexity, can only show limited complexity by itself and a solution in the sense of the model might simply not be feasible.

Vice versa, there are cases where complexity is necessary and not a solution mechanism. One of these cases is the definition of highest-class capital for own funds requirements of banks. The EU is missing a common definition of highest-class capital and it is all but impossible to find one that includes all types of high-quality capital held by banks in the EU. Rules on this require flexibility for supervisors to determine themselves whether the own funds are eligible to serve as high-class capital that is safe and liquid. The model has little power when a harmonization solution must be complex to be feasible at all.

The main feature of this case II, however, is that it allows to also evaluate hypothesis H2, which refers to the social planner component of the model. The model predicts that a social planner that regulates subjects with diverging preferences will also introduce regulatory corridors in common rules that allow these constituents to come closer to their preferred level of regulation. The European institutions, especially the European Commission and the ECB, might come as close to such a social planner as possible in the reality of international regulation. However, states are not governed by the Commission or other European agencies – they are not their 'planners' – but Commission, states and the European Parliament are makers of legislation that also negotiate with each other. This still leaves the Commission and other European actors, most notably the ECB, as bodies concerned with the welfare of the entire Union or the Eurozone. Thus, they can very well be regarded as central planners with a mandate to serve all constituents that come close to social planners. Especially and despite its role as a mere commentator on legislation, the highly independent ECB might be regarded as such.

It shows that these central planners are indeed concerned with reducing complexity of rules. Yet, only in few cases, they were actually keen on reducing all room for maneuvering for national supervisors and regulators or banks. One such occasion is the case of risk buffers, which were supposed to add to existing capital precautions to ensure financial stability in sudden crises. The Commission explicitly argued for clear common rules for that, which could only be changed on the

joint level in a harmonized way.¹¹⁹ The main argument was to avoid regulatory arbitrage – a central theme in criticisms of complex international rules. Even the ECB opposed such a strict approach hinting at the needs of member states to adjust to domestic circumstances – an argument clearly in line with the theory. In most other cases, such flexibility for national supervisors and regulators was already part of the proposals and comments by these central planners, which again supports the argument of the model. This is something that also has to be taken into account when assessing complexity in international regulation: It showed that central planners that might come close to the social planner from the model would not advocate for non-complex solutions in such negotiations and incorporate the different preferences of their constituents.

The last claim of the model, summarized in hypothesis H3, referred to the small amount of occasions of manifested financial instability and that the expected costs associated with complexity might, thus, change over time as expectations of crises change. The central claim was that a longer time passed since the last crisis would lead to more complexity as its costs are underestimated. This idea was inspired by the move from the relatively simple Basel I framework to the highly complex Basel II accord. Yet, that happened over a long period of time. There is so much noise in between that a clear tracing of the process from Basel I to II is all but impossible. On the other hand, Basel I was agreed under an Anglo-American winning coalition, while there was no such alliance in Basel II, which makes these two cases extremely different in terms of the model.

Case III is the auxiliary case to examine the development of regulation over time but it cannot support this claim of hypothesis H3. It refers to the resolution framework for banks in the European Union and, once again, supports the first two hypotheses in most parts examined here.

The bank resolution framework needed rules on how to ensure that banks have enough liabilities feasible for a bail-in – a participation of creditors in the recapitalization of a struggling bank. Such minimum requirements for own funds and eligible liabilities (MREL) were introduced with the first bank recovery and resolution directive (BRRD) in 2014 and already exhibited some complexity. For example, the requirements were calculated by national authorities (for banks

¹¹⁹ Most likely, there was also some power play involved here as the Commission would have been the central actors in such adjustments.

supervised by them) based on common European technical standards. That left room for these regulators to adjust the burden for banks discretionally but to a limited extent.

This regulatory framework was reformed later between 2017 and 2019, part of which was MREL2. As explained above, the model would predict that the new set of rules might get more complex. Initial evidence even hints at that: the new rules indeed included more exceptions and other provisions that widen the regulatory corridor. However, MREL2 also included some reductions of complexity through hard minimum quotas as international agreements on the matter were implemented. This stands in contrast to the model predictions and hypothesis H3 or at least prevents the case from confirming it. This might be explained through the short timeframe or one might even regard MREL and MREL2 as parts of a unified regulatory process. Yet, the qualitative case study approach of this empirical chapter does not allow for a thorough examinations of regulatory results or negotiations over a much longer period due to the associated noise. Thus, H3 cannot be supported by this investigation.

Overall, the empirical part gives compelling evidence that the model has explanatory power for complex outcomes in international regulatory harmonization attempts. It also showed that central planners would advocate for regulatory corridors if their constituents would profit from some flexibility. Yet, it could not show that such corridors might widen over time.

V Conclusion

V.1 Conclusion

The overarching theme of this book is the regulation of the circulatory system of capital in the world economy and its ‘pumps’ – namely banks. Specifically, this book provides an explanation of why this regulatory framework might end up being incoherent – or complex, as it is most commonly framed. This complexity is shown to be a solution mechanism to diverging preferences of states, which necessarily follows from the institutional settings of international banking markets.

In contrast to the metaphor of financial institutions as the heart of the financial system in a market economy, banks operate in a decentralized way. There is no brain that both knows where capital is needed and can directly steer it this way but banks decide for themselves where to put capital. This can easily result in problems, as the interests of the individual actors will diverge from a common interest that would include systemic stability. An auxiliary solution without an autocratic ‘brain’ is needed to prevent maldevelopments that originate from this decentralized nature of the market.

Regulation and supervision of banks is such a solution. Giving banks a framework to operate in can reduce their opportunities to pile up excessive risk or to engage in other problematic behaviors that lead to a negative outcome for the entire economy, including financial crises. Thereby, regulation effectively restrains the natural behavior of banks, which leads to the effect that they have an incentive to circumvent regulation or to weaken rules where possible. In its extreme, regulation can become so rigid that it strangles banks and seriously reduces their ability to move capital into the right spots.¹²⁰ A decisive feature of good regulation is that it restrains banks in a way that avoids crises but does not hamper the discovery mechanisms of the market too much, which is a major reason to decentralize capital allocation in the first place. Literature on banking regulation generally covers different aspects of this trade-off.

The specific focus of this book is the international dimension of this regulation and the reasons behind it resolving this trade-off in a *complex*, potentially sub-optimal way in this arena. In a

¹²⁰ ‘Wrong’ regulation can also easily alter incentives for banks such that capital is redirected, which can lead to reduced stability.

globalized capital market, financial stability within a jurisdiction not only depends on domestic regulation but also on that of peers. This interconnectedness applies to both direct cross-border contagion effects and regulatory evasion behavior by banks if rules differ across jurisdictions. Hence, there is a need for regulatory harmonization to resolve a mismatch between domestic regulators and international banks and markets, which adds to a general demand for a level-playing field if banking markets are supposed to be open. Yet, the existing regulatory harmonization attempts, particularly in Basel, are subject to major criticisms for being too complex and, thereby, leaving loopholes. The major point here is that complex regulatory regimes open avenues for banks to make use of differences across or ambiguous provisions within regulatory regimes to reduce their regulatory burden. This means that complexity would, aside from inducing higher administrative costs, harm financial stability. Such problems associated with complexity in international regulation have been brought up by multiple researchers and stakeholders of the regulatory process (e.g. Caprio, 2013; Gai et al., 2019; Haldane & Madouros, 2012; Ingves, 2016). This makes complexity of international banking regulation accords an important topic to study.

Complex regulation in this book is defined as a bounded set of rules that applies to active subjects of regulation that can then move within this set. The larger the room for maneuvering for these subjects, the more complex a regulatory regime is – expressed by the metaphor of a wide or narrow regulatory corridor. This conceptualization is a departure from both common definitions of complexity in other contexts (e.g., the discretion-reducing complexity in Huber & Shipan (2002)) and simpler measures of complexity in banking regulation such as the number of pages of agreements as used in Haldane & Madouros' (2012) piece. The latter is an approximation of incoherence that essentially refers to exceptions and special rules within regulatory accords that would make them longer. The regulatory corridors-definition directly addresses ambiguities in both national and international rules as it refers to the actual room for maneuvering for banks, which is criticized when regulation is regarded as too complex. A wide regulatory corridor – much complexity – effectively makes regulation sub-optimal by both potentially putting excessive burdens on back-offices and supervisors as well as enabling regulatory arbitrage and, thus, evasion opportunities for banks.

The question now is why such complexity emerges in international regulatory negotiations if its effects are so negative. The literature so far has not provided a convincing explanation for such potentially sub-optimal outcomes. Seminal pieces that investigate aspects of banking regulation negotiations with focus on the incentives and preferences of regulators and states (such as

Drezner, 2007; Singer, 2007) largely ignore the dimension of complexity. In contrast, *qui bono*-arguments that directly or indirectly acknowledge the issue of complexity rely on regulatory capture theory and the claim that banks would successfully engage in making regulation more complex to take advantage of that (e.g., Griffith-Jones & Persaud, 2003; Lall, 2012). This book argues that this approach neglects the diverging interests of banks on the international stage, which makes concentrated industry action difficult. Thus, regulatory capture does not provide a causal argument for the emergence of regulatory corridors but only a functionalist analysis of who might take advantage of them. This might be different in a domestic setting where one bank or group of banks might push through their interests. However, there is no satisfying causal answer to the puzzle of the emergence of regulatory corridors in *international* banking regulation.

Regulatory corridors are not a bug; they are a feature in many fields of international banking regulation. That is the answer that this book would give to criticisms of complexity and unclear rules in international banking regulation harmonization relating it to less financial stability. This result is based on the argument that states have different preferences in terms of regulation and such complexity can bring them closer to this preferred point of regulation, increasing their domestic welfare. Such a solution might be worthwhile even if complexity comes at a cost.

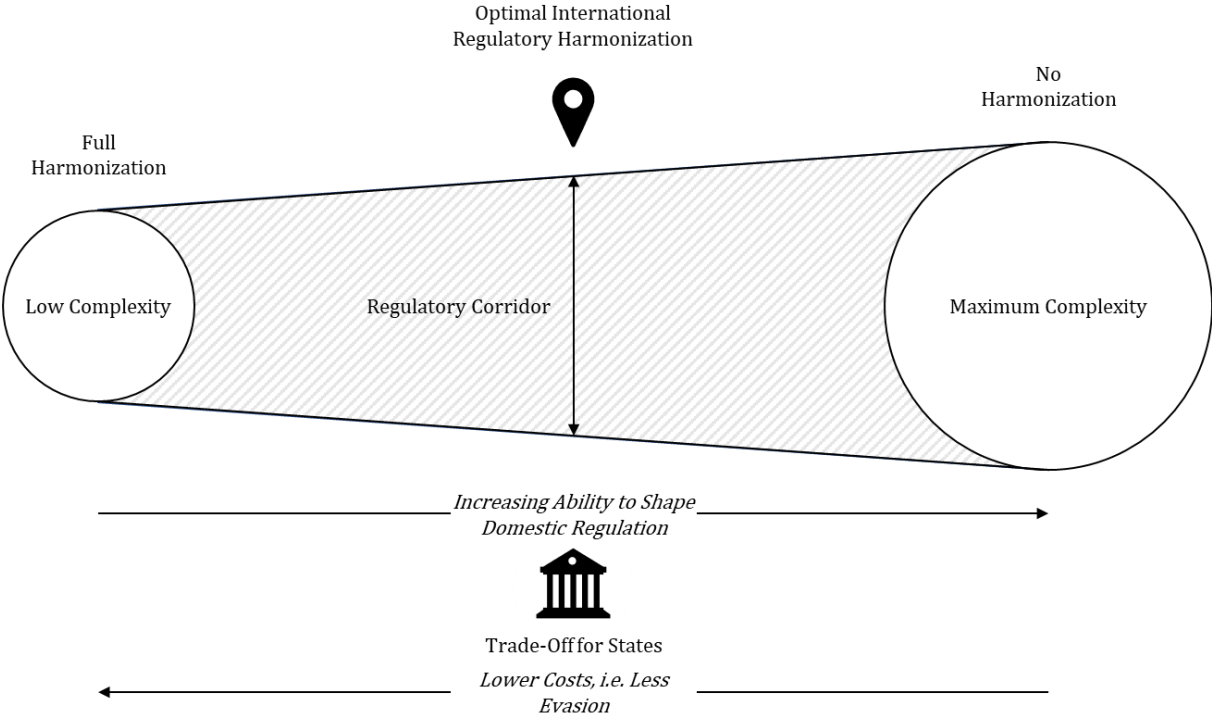


Figure 11: Regulatory corridors as a solution between full harmonization and no harmonization.

The corresponding argument is made in a formal economic model that shows how it is feasible to regard a regulatory corridors-outcome as superior to a unified set of rules. As soon as the assumption of diverging preferences is fulfilled, the regulatory harmonization outcome would necessarily become complex in the sense of ambiguous and somewhat incoherent accords. This is because the benefits from individual flexibility to implement common rules closer to national preferences outweigh the direct and indirect costs of such complex arrangements up to some point. While this seems like a straightforward claim, the regulatory corridors-hypothesis is a departure from previous explanations and clearly operationalizes the determinants of complexity in international banking regulation and its role as a solution mechanism.

Furthermore, the model shows that this complexity itself is not simply a result of a coordination problem but that a central planner would also introduce flexibility in banking accords if facing the same situation. The width of the resulting regulatory corridor can differ but the general idea of trading coherence for flexibility up to some point remains valid in this setting.

The regulatory corridors-model also covers the intertemporal case in which the role of expectations for the theory is highlighted. The costs of complexity, especially the most interesting ones that refer to financial stability, are often only revealed *ex post*. They are uncertain and must be estimated when making decisions, which leaves room for changes in such estimations. A crucial assumption of this part of the model is that expected costs of complexity decrease the further a crisis lies in the past. This makes the (constant) benefits from individual regulation more valuable in relation to costs, which would increase the optimal width of regulatory corridors for countries.

Hence, by relaxing the assumption that expectations of these costs have to remain constant, the third, intertemporal hypothesis of the model is developed: the coherence of regulatory accords depends on the stage of a regulatory cycle states find themselves in. Such a cycle starts with a crisis and stability-enhancing reforms that show little complexity and lead to stability but also restrain banking markets. This stability then leads to a shift of expectations about costs of financial instability, which are eventually perceived as being less important compared to the restraints put on banks by regulation. Pressure emerges to further individualize regulation. Essentially, this proposition is an extension of the Minskyan Financial Instability Hypothesis, which predicts that the absence of crises in financial markets can create financial euphoria that leads to ever-more risk-taking, eventually resulting in a financial crisis. Especially the expectations-part of the theory of regulatory corridors adds to this, as it provides a rationale for why international accords or

their implementation might become more complex in periods of stability and, thus, lead to less stability from the point of international regulation.

These abstract claims are extensively evaluated in three distinct qualitative case studies, which support the general theory of regulatory corridors as well as of the potential role of a central planner but fail to support the third, intertemporal claim of the model. These cases were chosen based on their basic characteristics, including a potentially complex outcome in the sense of the model and an institutional setting similar to that of the abstract model. Another argument for these cases was that a qualitative examination was feasible within the framework of this book. A whole book by itself could be filled with similar examinations of the initial introduction and later reforms of the internal ratings-based approach in calculating regulatory capital for credit risk (case I on the treatment of operational risk is somewhat a small version of such an endeavor). Also, all kinds of special rules – for example, for rich country government debt or small and medium enterprises – in multinational accords could be examined with regard to the regulatory corridors-model.

Each of the three cases focuses on one specific part of the regulatory corridors-theory. The basic model was motivated and constructed with the international Basel II and III regimes in mind, which are results of classic international negotiations. Thus, the first case is located in this universe and examines the treatment of operational risk in the Basel II accord based on negotiation documents and experiences from interviewees. The case study shows how a continental European and an Anglo-American alliance had vastly different preferences with regard to the treatment of such risks and none of them was powerful enough to implement its own preferred set of rules. These diverging preferences were based on different institutional settings of the two blocs: the US-UK alliance wanted more flexibility for its (large) banks in determining their precautions against operational risk, while the continental European powers wanted rules with low administrative costs that would cover all banks relatively equally (even though they also wanted to differentiate between larger banks with sophisticated back offices and smaller ones). The initial proposal was relatively close to the continental position but the Anglo-American alliance widened the regulatory corridor by negotiating a very flexible type of precautions for approved banks into the final regulation. This approach essentially required banks to show their ability to manage operational risk and the precautions for it instead of prescribing regulatory capital. On the other hand, the simpler rules for smaller banks remained in the accord but were not implemented in the US. This was a clear widening of the regulatory

corridor to reconcile diverging preferences on this regulation, which was explicitly expressed by US officials. These findings provide strong support for the basic regulatory corridors-hypothesis.

The other two cases cover the European sphere as the logic behind the cases is to subsequently add hypothesis to the empirical evaluation. The European Union with its agencies comes close to a central planner¹²¹ but the general setting is still one of states negotiating with each other (at least in the Council of the European Union, which has to agree on regulations). Case II is quite broad and shows the struggle between member states over the implementation of the initial Basel III reform package, which reformed banking regulation after the Global Financial Crisis 2007-9. It shows how different fractions tried to widen the corridor of regulatory outcomes under European Union law (which is binding in contrast to the soft law imposed by the Basel Accords). A solution to disagreements was time and again to allow states to apply rules differently. Strikingly, such regulatory corridors-solutions were also applied to cases where one country, the UK, wanted discretion to apply rules on extra capital requirements more strictly than envisaged in the proposal by the European Commission. Here, a rare direct contestation about the width of the regulatory corridor emerged: The Commission as an overarching agency aimed for coherence across countries as a central goal of its regulatory approach while states favored having more discretion and less harmonization. The solution was to widen the corridor but with some safeguards against full divergence from common rules. Generally, the Commission proposed a regulatory framework that still left limited room for diverging implementations of rules, especially with regard to supervision (pillar II). The same applies to other EU agencies with their own respective focusses. This case supports the hypothesis that a central planner would also introduce complex solutions but to a different degree than the individual countries. The struggle by member states to widen the corridor vis-à-vis the Commission proposal again supports the general hypothesis.

The third case covers the more specific issue of resolution regimes for struggling banks in the EU (2014 and 2019), which was reformed over time such that an intertemporal examination might be possible. The static hypotheses are again supported in this case but the intertemporal one, especially with regard to a relaxation of rules over time, is not. The hypothesis would predict a more complex regime over time through renegotiations or divergence by member states as their individual preferences would become more important than harmonization once the crisis (and its

¹²¹ The limitations to this approximation are discussed extensively in case II. Especially the European Commission is highly political but still is responsible for the entirety of Europe and does not only represent a certain country or interest group.

costs) that induced the initial regulation dwindles from the minds of policymakers. Hence, a widening of the regulatory corridor in the regulation regime for banks would be a rare evaluable case where one could more deeply examine the reasons for intertemporal changes in the dependent variable.

However, in contrast to model expectations, complexity of the resolution regime was even reduced in the examined timeframe. This might be the result of the short timeframe between the setup of the initial regulatory regime and its overhaul, which were only a few years apart. One could even regard the whole process as a single one, which would make it not suitable for an intertemporal investigation at all. Here, it becomes evident that the model was constructed with criticisms of the Basel regulation in mind, which often refer to a great increase in complexity between Basel I and II. The latter was introduced after a long period of relative financial stability in the dominant negotiating countries, while the former was the direct result of financial troubles. Yet, the noise due to changes in the negotiation environment between these two accords is so overwhelming that no serious qualitative study could try to identify causal relationships between shifts in expectations and less coherent regulation. Future research could try to use quantitative approaches that explicitly measure or approximate the width of regulatory corridors under different regimes. The empirical approach chosen here enables a robust evaluation of static cases as well as examinations of short timeframes but no systematic robustness-checks or control for changing external factors that might alter the whole picture in between two different data points.

Overall, the cases support the static theory of regulatory corridors, which substantially adds to the understanding of regulatory processes on the international stage. This yields important implications both for research and policy.

V.2 Implications and future research

V.2.1 Research implications

The treatment of complexity as a variable in international regulatory negotiations adds a dimension to research in the field. It would increase the robustness of such research to include this dimension or to spell out why it is neglected when theorizing about or conducting empirical analyses of regulation. For example, adding complexity to the variables in Drezner's (2007) model on different types of international cooperation could have led to different results. This book itself extends Singer's (2007) world of state-centric negotiations by adding complexity as a variable. Of

course, the necessity to treat it as a relevant variable only applies to fields where complexity might serve as a solution mechanism to diverging preferences and where it is costly.

More specifically, the treatment of complexity as a variable would affect research that is supposed to evaluate or improve banking regulation. Calomiris and Haber call for those who strive to find better regulatory solutions to also “[...] think about banks, and the potential desirability of reform proposals, in the context of the political [...] environment in which banking outcomes are determined” (Calomiris & Haber, 2014, p. 486). In a footnote, however, they specify that many “[research] contributions emphasize that robust reforms of financial policies tend to rely on simplicity of regulatory rules [...]” (p. 487), which – taking the regulatory corridors-theory into account – disregards important political fundamentals of the international stage. While their focus is not the international stage but domestic regulation, in Europe both overlap and other countries’ regulatory systems are highly influenced by G20 and Basel standards. Hence, an application of the theory of regulatory corridors to such holistic analyses might yield very different outcomes than a narrow focus on financial stability arguments that might indeed simply call for reduced complexity. Here, the research from this book can make a difference by broadening the view on regulation and its foundations.

Furthermore, the theory of regulatory corridors also fits into the wider literature of financial cycles, which is theoretically based on Minsky’s (1992) ideas, but also refers to the empirical results by Reinhart & Rogoff (2009) that financial crises are re-occurring. The emphasis of the model on expectation-building with regard to costs from complexity and the emergence of regulatory corridors adds a theoretical connection between the very broad Minskyan Financial Instability Hypothesis and the actual role of regulation in actual banking crises. Wider regulatory corridors might be the result of changing expectations due to financial euphoria and then translate into less stability on the banking market that then contributes to the next crisis. However, as this book cannot show empirical support for widening regulatory corridors over time, prove of such theoretical claims would require more research.

Applications of the theory of regulatory corridors is not limited to international banking regulation even though banks and their regulation are relatively particular in many regards. First of all, there would have to be three active levels of regulation which already rules out almost all instances of domestic regulation: there would have to be a rule-making stage that creates regulation for a rule-taking stage that then applies these regulations to a third stage, the eventual subjects of regulation. This is the case in international banking regulation where international

accords give a framework to countries that determines how they regulate banks; banks then represent the third stage here. If the regulatory negotiations would only be related to two levels, for example, the effects of complexity would be different as rulemaking and their application would be in one hand. This fits into the tradition of Putnam's (1988) two-level games – the theory also only knows two rule-setting stages. Second, the ultimate subject of regulation would have to be an active one that reacts to the regulatory framework – as banks are. Otherwise, complexity would not be that problematic as especially the active evasion opportunities generated by complexity lead to costs from complexity. Last, the goal of regulation would probably have to be not clearly measurable. This is related to the previous point as complexity might only be a major problem in cases of it building up hidden costs in the medium to long run. Financial stability is such a goal that is difficult to measure *ex ante* in contrast to, for example, carbon levels.

Cases that might be similar enough to banking regulation such that the theory is applicable could be closely related fields such as insurance regulation or remote fields such as airline safety regulations. The latter case is an example where evasion behavior by the subjects of regulation is sanctioned frequently by blacklisting airlines that do not adhere to domestic standards but make use of differences in regulation across countries. This solution mechanism makes complexity much less problematic as ring-fencing is easier and less costly than in banking markets. However, the general logic of how complexity might emerge can still apply here as the counteraction would take place after the rulemaking.

It would also be worthwhile examining why complexity might not emerge in other closely related fields – at least not to the extent described in this book. An example for such related fields is the complex of international derivatives regulation after the Financial Crisis. Quaglia (2020) finds that the newly emerged international regime is quite precise and does not exhibit wide regulatory corridors in elemental parts of the regime such as in the fields of derivatives trade reporting and margins for undeclared derivatives. In these areas, states adhere to coherence while the derivatives industry advocates for more complexity. In contrast, other rules (e.g., derivatives trading and clearing) show much complexity. This divergence might be explained by the regulatory corridors model. The difference might lie in the preferences of states – domestic derivatives markets might be more homogenous than banking markets – or other expectations regarding the costs from disharmonized rules. Identifying these preferences and expected costs could be the subject of further research that might reveal additional causal relationships with regard to the regulatory corridors model.

Further research with a focus on banking regulation could expand the empirical examination of the model and its determinants or could actually expand the model regarding crucial issues in banking. As outlined above, quantitative research could help to clearly identify positions of multiple regulators and the corresponding regulatory outcomes. This could be done through different kinds of quantitative text analysis, particularly new approaches such as the one of Colliard & Georg (2020) that evaluates regulatory texts based on computer science methods that usually are used to measure complexity of algorithms. Larger empirical projects could also trace the evolution of certain regulatory approaches throughout regulatory negotiations or over longer periods of time in both a qualitative and a quantitative way. This could both add to the reliability of the model, show the limits of its applicability, and open new avenues for further developing the regulatory-corridors hypothesis. In a best case, such further empirical research could lead to estimates of actual optimal levels of complexity.

A crucial improvement of the model on the theoretical side would be to extend it regarding the dimension of contagion and the differences between widening the regulatory corridor upwards and downwards. So far, the model subsumes all types of costs from complexity under one abstract inflation factor. However, this is not necessarily accurate as this hints at two flaws that do not change the general result but might harm its applicability to some situations. First, dangers from contagion might very well change the calculation of costs and fundamentally change the calculation. Implicitly, the model covers this but an explicit examination of how the results of regulation on the banking market in a peer country might influence domestic welfare would certainly add to the explanatory power of the model. This is a complicated endeavor and adds little to answering the basic research puzzle, which is why it was left out in this book. But influencing the regulation of peers is a central function of regulatory harmonization, which the model could also examine after some adjustment. Second, the inflation factor is insensitive on whether the deviation from a hypothetical coherent regulation is towards stricter or less strict regulation. A central assumption of the model is that all widening of regulatory corridors results in expected costs. Yet, it seems reasonable to assume that a widening towards stricter regulation might have lower cost effects through increased instability than allowing some states to impose looser rules. In the abstract model world, this has little effect (especially as the regulatory sets are not strict vs loose regulation but vectors of diverging regulatory preferences) but it might very well affect real world decision-making. However, case II also showed an example where the European Commission was actually concerned about negative effects from stricter regulation in some member states. This makes the issue less pressing.

Overall, the theory of regulatory corridors lays the foundation for more detailed research regarding this dimension of regulatory negotiations. Further expansions of the model or the empirical examination can help to identify clear regulatory corridors or to evaluate the role of contagion when agreeing on complex outcomes. However, the existing model already leads to important policy implications.

V.2.2 Policy implications

Among practitioners, the dimension of complexity has already drawn attention in the past years. This shows in research, speeches, and position papers by central banks and similar bodies. The most prominent example of that is Haldane & Madouros' (2012) metaphor of the dog and the frisbee that also inspired this book. But there are numerous other examples how complexity, regulatory discretion, and coherence of international accords have become a dimension that is of importance to policy-makers on the technical stage (see, e.g., Gai et al., 2019; Haldane, 2013; Hawke, 2003b). Much of this refers to complexity as being costly due to administrative burdens but Haldane and others also explicitly refer to complexity and the resulting discretion for banks as a threat to financial stability. More importantly, concerns about coherence of regulation already influence decision-making as the example of the Commission proposal for capital buffers examined in case II (European Commission, 2011a, 2011b). The Commission, the European Central Bank, and member states explicitly argued about the trade-off between coherence (the maximum harmonization approach of the Commission) and flexibility (especially the UK with some support of the ECB) of common rules for such buffers.

First of all, this book provides a theoretical framework for such discussions. A straightforward policy-implication of this research is that complexity of a regulatory regime should be deliberately treated as a variable in the negotiations. This would stand in contrast to past approaches where we saw more of the basic regulatory corridors-hypothesis that states simply following their own preferences would come up with complex regulatory accords. Making this neglected part of the negotiation outcomes an openly debated variable from the beginning would replace later reforms to fix problems arising from complexity.

This stands in contrast to dominant current approaches where the solution-aspect of regulatory complexity might be overused. A conscious decision-making on operational risk treatment in Basel II (case I) could have led to a different approach towards regulation from the beginning. As the case shows, the initial proposal for such regulation was relatively close to continental

European preferences. To accommodate to Anglo-American preferences, the regulatory corridor was widened and, thus, more complexity was introduced. This increase of complexity was heavily criticized (e.g. Hawke (2003b)) but was an almost necessary result of the first regulatory approach being skewed towards preferences of one party, which would not want to give up its own achievements in the course of the negotiations. A holistic initial proposal for regulation that accommodated to both sides' preferences to some extent might have been more promising in containing complexity compared to the approach where one side is contempt while the other requires major changes. But such changes in how proposals are designed would only be feasible when complexity would be treated as a variable from the beginning and not just a property of the outcome.

Based on the model, excessive complexity¹²² appears to be the result of a collective action problem to some extent. The second, related policy-implication of the theory of regulatory corridors would be a strengthening of central actors that can improve such decision-making towards 'healthy' levels of complexity. The European stage has driven that to an extreme with quasi-constitutional central actors (not necessarily planners) such as the European Commission that directly influence rulemaking. The regulatory regime in the EU is even more harmonized by the fact that the most important banks in the Euro area (and partially beyond) are supervised by the ECB instead of national regulators that might interpret rules differently. Again, case II shows that the Commission clearly preferred more harmonized approaches than the member states and engaged in reducing room for discretion to a level it saw as welfare-enhancing for the entire EU. A danger of such central actors still is that they might be subject to forces that do not necessarily lead to welfare-improving positioning. One could claim that the Commission, for example, also has a political agenda beyond financial stability such as advancing European integration.

On the other hand, such strong integration cannot be expected to happen on the international stage anytime soon and unsupervised complexity might emerge time and again. An auxiliary solution could be a stronger role for expert bodies such as the Bank for International Settlements and associated bodies (similar to the European Systemic Risk Board in the EU). These organizations could give external opinions on the implications of complex solutions, whether they are welfare-enhancing through flexibility or harm the collective good financial stability. By simply offering public advice on that instead of taking a position on the negotiation table, these bodies

¹²² The amount of complexity seen as excessive would probably be subject to political decision-making or the result of a deliberative process including more research on the topic. The regulatory corridors-model might provide a starting point for such research but remains too abstract to determine 'good' and 'bad' levels of complexity in reality.

could make the consequences of different widths of the regulatory corridor more obvious and would put soft pressure on negotiators to take this into account or might even influence negotiations through agenda-setting. This would correspond with the previously discussed idea of making the variable 'complexity' more prominent and changing negotiation design towards holistic initial proposals (which could come from such agencies).

Such central bodies could also help mitigating potential intertemporal effects by calling out relaxations in coherence over time, just as they are supposed to serve as watchdogs regarding general systemic risks to financial stability.

But, third, the theory of regulatory corridors also crucially reveals one property that should not be forgotten in the fight against discretion and complexity: there are benefits to flexibility. This was something that virtually every practitioner mentioned as soon as they were confronted with criticisms of complexity. Some discretion is needed and welfare-enhancing. This synthesis of benefits and costs of complexity that result in a trade-off must not be forgotten in any discussion about the matter, which might be the case if attention just turns to reducing complexity for its costs. This possibility once again showed in the maximum harmonization approach of the Commission in the implementation of Basel III capital buffers and was criticized by both states (which might have their own interests) but also the European Central Bank.

This last point might become more important in the future when international bodies start tackling the issue of complexity. A swing of the pendulum from disregarding complexity issues to a large extent (as in operational risk treatment in Basel II) towards maximum harmonization might yield similarly sub-optimal results. This dichotomy essentially refers back to a point made in the introduction: unmanaged complexity can yield individually rational results that eventually reduce collective welfare. However, actual collective welfare-enhancement might rather emerge through managing complexity than through eradicating it completely.

'Wider' swings of the pendulum to the extremes are likely to lead to even more extreme swings into the respective other direction. The negative effects of unmanaged complexity have led to the recent emergence of demands to reduce complexity altogether. Excessive harmonization, which could result from this, might eventually lead to dysfunctional domestic markets by strangling them with rigid regulation (which would be visible not in crises but throughout normal times). Such developments, while potentially reducing the likelihood of crises, can easily lead to a swing back to demands to individualize regulation and wider regulatory corridors – there is no glory in

prevention after all. At a different point in time, depending on the position of the pendulum, the regulatory corridors-model would have probably called for more harmonization and less reliance on individual optimization.

This book calls for a more restrained approach and proposes a rationale for a third way between the two extremes. It might contribute to an open and informed debate about the benefits and costs of regulation and its complexity, which may eventually result in a better and more transparent regulatory process.

Such a deliberative process should also entail a discussion about what risks regulatory jurisdictions are willing to take. Maximum harmonization and very strict rules might drive down risks for crises to close to zero but also strangle the economy while the opposite might lead to ever-more instability but decent growth in between crises. This is a trade-off that probably must be resolved politically, for example when fully completing the European Banking Union. Research on this trade-off is needed to endow policymakers with the means to come to a clear decision that they then later have to defend – especially if risks realize. Singer (2007) and Drezner (2007) have contributed by showing the incentives behind entering regulatory harmonization accords and how the nature of the regime changes with the institutional setting. This work adds to this by assessing the eventual regulatory setup that emerges within these accords.

VI References

- Amri, P. D., & Kocher, B. M. (2012). The Political Economy Of Financial Sector Supervision And Banking Crises: A Cross-Country Analysis. *European Law Journal*, 18(1), 24–43. <https://doi.org/10.1111/j.1468-0386.2011.00584.x>
- Bank of England. (2013). *Statement Regarding The Prudential Treatment Of Banks' Significant Investments In Insurance Companies For Firms That Are Regulated By The PRA*. <https://www.bankofengland.co.uk/-/media/boe/files/news/2013/june/statement-regarding-the-prudential-treatment-of-banks-significant-investments.pdf>
- Barker, A. (2011, November 8). Barnier Vs The Brits. *Financial Times*. <https://www.ft.com/content/5471afde-096a-11e1-a20c-00144feabdc0>
- Barth, J. R., Caprio, G., & Levine, R. (2008). Bank Regulations Are Changing: For Better Or Worse? *Comparative Economic Studies*, 50(4), 537–563. <https://doi.org/10.1057/ces.2008.33>
- Barth, J. R., Caprio, G., & Levine, R. (2012a). *Guardians Of Finance: Making Regulators Work For Us*. MIT Press. <https://doi.org/10.7551/mitpress/9065.001.0001>
- Barth, J. R., Caprio, G., & Levine, R. (2012b). *The Evolution And Impact Of Bank Regulations* (World Bank Policy Research Working Paper, No. 6288). <https://doi.org/10.1596/1813-9450-6288>
- Barth, J. R., Caprio, G., & Levine, R. (2014). Misdiagnosis: Incomplete Cures Of Financial Regulatory Failures. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2472974>
- Barth, J. R., Caprio Jr., G., & Levine, R. (2004). Bank Regulation And Supervision: What Works Best? *Journal Of Financial Intermediation*, 13(2), 205–248. <https://doi.org/10.1016/j.jfi.2003.06.002>
- Basel Committee on Banking Supervision. (1999). *A New Capital Adequacy Framework*. <https://www.bis.org/publ/bcbs50.htm>
- Basel Committee on Banking Supervision. (2001a). *Consultative Document: Overview Of The New Basel Capital Accord*. <https://www.bis.org/publ/bcbsca02.pdf>
- Basel Committee on Banking Supervision. (2001b). *Working Paper On The Regulatory Treatment Of Operational Risk*. https://www.bis.org/publ/bcbs_wp8.pdf
- Basel Committee on Banking Supervision. (2001c). *Consultative Document: The New Basel Capital Accord*. <https://www.bis.org/publ/bcbsca03.htm>
- Basel Committee on Banking Supervision. (2002). *Sound Practices For The Management And Supervision Of Operational Risk*. <http://www.bis.org/publ/bcbs96.htm>

- Basel Committee on Banking Supervision. (2003a). *Consultative Document: The New Basel Capital Accord*. <https://www.bis.org/bcbs/bcbscp3.htm>
- Basel Committee on Banking Supervision. (2003b). *Quantitative Impact Study 3 – Overview Of Global Results*. <https://www.bis.org/bcbs/qis/qis3results.pdf>
- Basel Committee on Banking Supervision. (2004). *Basel II: International Convergence Of Capital Measurement And Capital Standards: A Revised Framework*. <https://www.bis.org/publ/bcbs107.htm>
- Basel Committee on Banking Supervision. (2008). *Principles For Sound Liquidity Risk Management And Supervision*. <https://www.bis.org/publ/bcbs144.htm>
- Basel Committee on Banking Supervision. (2010a). *Basel III: A Global Regulatory Framework For More Resilient Banks And Banking Systems*. https://www.bis.org/publ/bcbs189_dec2010.htm
- Basel Committee on Banking Supervision. (2010b). *Basel III: International Framework For Liquidity Risk Measurement, Standards And Monitoring*. <https://www.bis.org/publ/bcbs188.htm>
- Basel Committee on Banking Supervision. (2010c). *Basel III: International Framework For Liquidity Risk Measurement, Standards And Monitoring*. <http://www.bis.org/publ/bcbs238.htm>
- Basel Committee on Banking Supervision. (2011). *Basel III: A Global Regulatory Framework For More Resilient Banks And Banking Systems (Revised Version December 2011)*. <http://www.bis.org/publ/bcbs189.pdf>
- Basel Committee on Banking Supervision. (2012). *Basel III Regulatory Consistency Assessment (Level 2): Preliminary Report: European Union*. https://www.bis.org/bcbs/implementation/l2_eu.pdf
- Basel Committee on Banking Supervision. (2013). *Basel III: The Liquidity Coverage Ratio And Liquidity Risk Monitoring Tools*. <https://www.bis.org/publ/bcbs238.htm>
- Basel Committee on Banking Supervision. (2014). *Regulatory Consistency Assessment Programme (RCAP): Assessment of Basel III Regulations - European Union*. <https://www.bis.org/bcbs/publ/d300.pdf>
- Basel Committee on Banking Supervision. (2016a). *Eleventh Progress Report On Adaptation Of The Basel Regulatory Framework*. <https://www.bis.org/bcbs/publ/d388.pdf>
- Basel Committee on Banking Supervision. (2016b, March 4). *Basel Committee Issues Proposed Revisions to the Operational Risk Capital Framework*. Bank for International Settlements. <https://www.bis.org/press/p160304.htm>

- Basel Committee on Banking Supervision. (2017a). *Basel III: Finalising Post-Crisis Reforms*. <https://www.bis.org/bcbs/publ/d424.pdf>
- Basel Committee on Banking Supervision. (2017b). *Basel III Definition Of Capital: Frequently Asked Questions*. <https://www.bis.org/bcbs/publ/d417.htm>
- Basel Committee on Banking Supervision. (2018). *Basel Committee Charter*. <https://www.bis.org/bcbs/charter.htm>
- Bayerischer Landtag. (2008). *Schlussbericht Des Untersuchungsausschusses Zur BayernLB*. http://www.bayern.landtag.de/www/ElanTextAblage_WP15/Drucksachen/Basisdrucksachen/0000006000/0000006078.pdf
- Beck, T. (2016). Regulatory Cooperation on Cross-Border Banking – Progress and Challenges After the Crisis. *National Institute Economic Review*, 235(1), R40–R49. <https://doi.org/10.1177/002795011623500114>
- Beck, T., Silva Buston, C., & Wagner, W. (2018). *The Economics Of Supranational Bank Supervision* (CEPR Discussion Paper, No. 12764). https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3134415
- Beck, T., Todorov, R., & Wagner, W. (2013). Supervising Cross-Border Banks: Theory, Evidence And Policy. *Economic Policy*, 28(73), 5–44. <https://doi.org/10.1111/1468-0327.12001>
- Beck, T., & Wagner, W. (2016). Supranational Supervision: How Much And For Whom? *International Journal of Central Banking*, 12(2), 221–268. <http://www.ijcb.org/journal/ijcb16q2a5.pdf>
- Bell, S., & Hindmoor, A. (2018). Are The Major Global Banks Now Safer? Structural Continuities And Change In Banking And Finance Since The 2008 Crisis. *Review of International Political Economy*, 25(1), 1–27. <https://doi.org/10.1080/09692290.2017.1414070>
- Bénassy-Quéré, A., Brunnermeier, M., Enderlein, H., Farhi, E., Fratzscher, M., Fuest, C., Gourinchas, P.-O., Martin, P., Pisani-Ferry, J., Rey, H., Schnabel, I., Véron, N., Weder di Mauro, B., & Zettelmeyer, J. (2018). *Reconciling Risk Sharing with Market Discipline: A Constructive Approach to Euro Area Reform* (CEPR Policy Insights, No. 91). https://www.bruegel.org/wp-content/uploads/2018/01/PolicyInsight_91.pdf
- Bonsón, E., Escobar, T., & Flores, F. (2007). Sub-Optimality Of Income Statement-Based Methods For Measuring Operational Risk Under Basel II: Empirical Evidence From Spanish Banks. *Financial Markets, Institutions & Instruments*, 16(4), 201–220. <https://doi.org/10.1111/j.1468-0416.2007.00124.x>
- Brunsdon, J. (2017, June 26). Berlin Leads Backlash Against Italian Bank Rescue. *The Financial Times*. <https://www.ft.com/content/71ece778-5a53-11e7-9bc8-8055f264aa8b>
- Buch, C., & Goldberg, L. (forthcoming). Complexity And Riskiness Of Banking Organizations:

Evidence From The International Banking Research Network. *Journal of Banking and Finance*.

Burn, L. (2017). Regulatory Arbitrage: Some Thoughts. In F. Allen, E. Carletti, J. Gray, & M. Gulati (Eds.), *The Changing Geography of Finance and Regulation in Europe* (pp. 79–94). European University Institute. <http://fbf.eui.eu/ebook-changing-geography-finance-regulation-europe/>

Busch, A. (2002). *Divergence Or Convergence? State Regulation Of The Banking System In Western Europe And The United States*. [Workshop Contribution]. 2002 Nuffield College Workshop On Theories Of Regulation. <https://pdfs.semanticscholar.org/3175/7e05f32cdc1645a112a5d95aacfb7092700.pdf>

Busuioac, M. (2009). Accountability, Control And Independence: The Case Of European Agencies. *European Law Journal*, 15(5), 599–615. <https://doi.org/10.1111/j.1468-0386.2009.00480.x>

Calomiris, C. W. (2009). Financial Innovation, Regulation, And Reform. *Cato Journal*, 29(1), 65–91. <https://econpapers.repec.org/RePEc:cto:journl:v:29:y:2009:i:1:p:65-91>

Calomiris, C. W. (2011). An Incentive-Robust Programme For Financial Reform. *The Manchester School*, 79, 39–72. <https://doi.org/10.1111/j.1467-9957.2011.02266.x>

Calomiris, C. W., & Haber, S. H. (2014). *Fragile By Design*. Princeton University Press. <https://www.jstor.org/stable/j.ctt5hhpfs>

Calomiris, C. W., Heider, F., & Hoerova, M. (2015). *A Theory Of Bank Liquidity Requirements* (Columbia Business School Research Paper, No. 14–39). <https://doi.org/10.2139/ssrn.2477101>

Caprio, G. (2013). *Financial Regulation After The Crisis: How Did We Get Here, And How Do We Get Out?* (LSE Financial Markets Group Special Paper Series, No. 226). <http://www.lse.ac.uk/fmg/workingPapers/specialPapers/PDF/sp226.pdf>

Caprio, G., D'Apice, V., Ferri, G., & Puopolo, G. W. (2014). Macro-Financial Determinants Of The Great Financial Crisis: Implications For Financial Regulation. *Journal of Banking and Finance*, 44(1), 114–129. <https://doi.org/10.1016/j.jbankfin.2014.03.001>

Cassis, Y. (2017). Regulatory Responses To The Financial Crises Of The Great Depression: Britain, France, And The United States. In E. Balleisen, L. Benneer, K. Krawiec, & W. Jonathan (Eds.), *Policy Shock: Recalibrating Risk and Regulation after Oil Spills, Nuclear Accidents and Financial Crises* (pp. 349–370). Cambridge University Press. <https://doi.org/10.1017/9781316492635.013>

Christopoulos, D., & Quaglia, L. (2009). Network Constraints In EU Banking Regulation: The Capital Requirements Directive. *Journal of Public Policy*, 29(2), 179–200. <https://doi.org/10.1017/S0143814X09001068>

- Clementi, D. (1999). *The Basel Accord: Systemic Issues*. Bank of England.
<https://www.bankofengland.co.uk/-/media/boe/files/speech/1999/the-basel-accord-systemic-issues.pdf>
- Colliard, J.-E., & Georg, C.-P. (2020). *Measuring Regulatory Complexity* (HEC Paris Research Paper, FIN-2020-1358). <https://doi.org/10.2139/ssrn.3523824>
- Congressional Research Service. (2020). *Who Regulates Whom? An Overview Of The U.S. Financial Regulatory Framework*. <https://fas.org/sgp/crs/misc/R44918.pdf>
- Copelovitch, M., & Singer, D. A. (2017). Tipping The (Im)Balance: Capital Inflows, Financial Market Structure, And Banking Crises. *Economics & Politics*, 29(3), 179–208.
<https://doi.org/10.1111/ecpo.12097>
- Council of the European Union. (2011). *Progress Report On CRD IV/CRR (17166/11)*.
<https://data.consilium.europa.eu/doc/document/ST-17166-2011-INIT/en/pdf>
- Council of the European Union. (2012a). *Presidency Compromise On CRD IV (9225/12)*.
<https://data.consilium.europa.eu/doc/document/ST-9225-2012-INIT/en/pdf>
- Council of the European Union. (2012b). *Presidency Compromise On CRD IV (9716/12)*.
<https://data.consilium.europa.eu/doc/document/ST-9716-2012-INIT/en/pdf>
- Council of the European Union. (2012c). *Presidency Compromise On CRR (9224/12)*.
<https://data.consilium.europa.eu/doc/document/ST-9224-2012-INIT/en/pdf>
- Council of the European Union. (2012d). *Presidency Compromise On CRR (9715/12)*.
<https://data.consilium.europa.eu/doc/document/ST-9715-2012-INIT/en/pdf>
- Council of the European Union. (2012e). *Report On The General Approach On CRD IV / CRR (9223/12)*. <https://data.consilium.europa.eu/doc/document/ST-9223-2012-INIT/en/pdf>
- Curtin, D. (2017). 'Accountable Independence' Of The European Central Bank: Seeing The Logics Of Transparency. *European Law Journal*, 23(1–2), 28–44.
<https://doi.org/10.1111/eulj.12211>
- Daniels, L. von. (2017). *Letzte Ausfahrt Basel* (SWP-Studie, No. S12).
<https://www.ethz.ch/content/specialinterest/gess/cis/center-for-securities-studies/en/services/digital-library/publications/publication.html/3aebc762-731b-4f82-981e-b1fc21601853>
- Danielsson, J., Embrechts, P., Goodhart, C., Keating, C., Muennich, F., Renault, O., & Shin, H. S. (2001). *An Academic Response To Basel II* (Special Paper Series, No. SP130). LSE Financial Markets Group. <http://eprints.lse.ac.uk/51497/>
- Danielsson, J., James, K. R., Valenzuela, M., & Zer, I. (2016). Model Risk Of Risk Models. *Journal of Financial Stability*, 23, 79–91. <https://doi.org/10.1016/J.JFS.2016.02.002>

- Deutsche Bundesbank. (2016). Abwicklung Und Restrukturierung Von Banken – Die Neuen Mindestanforderungen TLAC Und MREL. *Monatsbericht, Juli*, 66-83. <https://www.bundesbank.de/resource/blob/652380/7de7461f5d69c5beb8cd96e141d9524b/mL/2016-07-mindestanforderungen-tlac-mrel-data.pdf>
- Dieckmann, N. (2013). Die Entwicklung Der HSH Nordbank Als Landesbank - Einige Einschätzungen. *Wirtschaftsdienst, 93*(1), 28–32. <https://doi.org/10.1007/s10273-013-1474-8>
- Dierick, F., Pires, F., Scheicher, M., & Spitzer, K. G. (2005). *The New Basel Capital Framework And Its Implementation In The European Union* (European Central Bank Occasional Paper Series, No. 42). <http://www.ecb.int/pub/pdf/scpops/ecbocp42.pdf>
- Dieter, H. (2015). *Die Vorzüge Selektiver Globalisierung: Zum Unterschätzten Nutzen Balkanisierter Finanzmärkte* (SWP - Studie, No. S9). https://www.swp-berlin.org/fileadmin/contents/products/studien/2015_S09_dtr.pdf
- Dombret, A. (2016, September 7). *Cui Bono? Komplexe Regulierung Und Ihre Folgen* [Conference Presentation]. 20. Banken-Symposium des European Center for Financial Services an der Universität Duisburg-Essen. <https://www.bundesbank.de/de/presse/reden/cui-bono-komplexe-regulierung-und-ihre-folgen-710950#tar-4>
- Dombrovskis, V. (2018, February 22). *“Future Strategies For Savings Banks”*: Speech By European Commission Vice-President Dombrovskis [Video]. Youtube. <https://www.youtube.com/watch?v=hCerZxy-zYo>
- Drezner, D. W. (1999). Plausibility Probes. In *The Sanctions Paradox* (pp. 59–101). Cambridge University Press. <https://doi.org/10.1017/CBO9780511549366.003>
- Drezner, D. W. (2007). *All Politics Is Global: Explaining International Regulatory Regimes*. Princeton University Press.
- Emse, C. (2005). Verbriefungstransaktionen Deutscher Kreditinstitute. In *Verbriefungstransaktionen deutscher Kreditinstitute*. Gabler Verlag. <https://doi.org/10.1007/978-3-322-94458-0>
- Ernst & Young. (2008). *Zusammenfassung Des Ernst & Young-Berichts [Report On The Failure Of SachsenLB]*. <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwJgzujLme7uAhUD1RoKHZ3dABAQFjAAegQIAhAC&url=https%3A%2F%2Fwww.medienservice.sachsen.de%2Fmedien%2Fmedienobjekte%2F88646%2Fdownload&usq=A0vVaw1Iyb1FhpjEMf2EWIm4XJXM>
- European Central Bank. (2001). *The New Basel Capital Accord: Comment By The European Central Bank (CP2)*. <https://www.bis.org/bcbs/ca/ecbrevi.pdf>
- European Central Bank. (2003). *The New Basel Capital Accord: Reply Of The European Central*

- Bank To The Third Consultative Proposals (CP3)*.
<https://www.ecb.europa.eu/pub/pdf/other/bcbscommentsecbcp3en.pdf>
- European Central Bank. (2012). Opinion Of The European Central Bank On CRD IV/CRR Proposals (2012/C 105/01). In *Official Journal Of The European Union*. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2012:105:FULL&from=EL>
- European Central Bank. (2018). *Guide To Fit And Proper Assessments In Line With The Joint ESMA And EBA Guidelines On Suitability*.
https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.fap_guide_201705_rev_201805.en.pdf
- European Commission. (2002). *Germany Agrees On The Implementation Of The Understanding With The Commission On State Guarantees For Landesbanken And Savings Banks*.
http://europa.eu/rapid/press-release_IP-02-343_en.htm
- European Commission. (2011a). *Proposal For A Directive Of The European Parliament And Of The Council On The Access To The Activity Of Credit Institutions And The Prudential Supervision Of Credit Institutions And Investment Firms And Amending Directive 2002/87/EC*. <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0453:FIN:EN:PDF>
- European Commission. (2011b). *Proposal For A Regulation Of The European Parliament And Of The Council On Prudential Requirements For Credit Institutions And Investment Firms (COM(2011) 452)*. <https://eur-lex.europa.eu/legal-content/GA/TXT/PDF/?uri=CELEX:52011PC0452&from=EN>
- European Commission. (2012). *Proposal For A Directive Of The European Parliament And Of The Council Establishing A Framework For The Recovery And Resolution Of Credit Institutions And Investment Firms And Amending Council Directives 77/91/EEC and 82/891/EC*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52012PC0280>
- European Commission. (2013). *Proposal For A Regulation Of The European Parliament And Of The Council Establishing Uniform Rules And A Uniform Procedure For The Resolution Of Credit Institutions And Certain Investment Firms In The Framework Of A Single Resolution Mechanism And A Singl*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52013PC0520>
- European Parliament. (2012). *Report On The Proposal For A Regulation Of The European Parliament And Of The Council On Prudential Requirements For Credit Institutions And Investment Firms (COM(2011)0452 - C7-0417/2011 - 2011/0202(COD))*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52011PC0452>
- Farrell, H., & Newman, A. (2016). The New Interdependence Approach: Theoretical Development And Empirical Demonstration. *Review of International Political Economy*, 23(5), 713–736. <https://doi.org/10.1080/09692290.2016.1247009>

- Federal Deposit Insurance Corporation. (2006). Operational Risk Management: An Evolving Discipline. *Supervisory Insights*, 4–11.
<https://www.fdic.gov/regulations/examinations/supervisory/insights/sisum06/sisumme r06-article1.pdf>
- Federal Reserve Bank. (2003). *Capital Standards For Banks: The Evolving Basel Accord (Federal Reserve Bulletin, September, 395-405)*.
<https://www.federalreserve.gov/pubs/bulletin/2003/0903lead.pdf>
- Federal Reserve Board. (2003, February 27). *Testimony Of Vice Chairman Roger W. Ferguson, Jr.* Federal Reserve Bank of the United States.
<https://www.federalreserve.gov/boarddocs/testimony/2003/200302272/default.htm>
- Financial Stability Board. (2015). *Total Loss-Absorbing Capacity (TLAC) Principles And Term Sheet*. <https://www.fsb.org/2015/11/total-loss-absorbing-capacity-tlac-principles-and-term-sheet/>
- Fратиани, M., & Pattison, J. C. (2015). Basel III In Reality. *Journal of Economic Integration*, 30(1), 1–28. <https://doi.org/10.11130/jei.2015.30.1.1>
- Gai, P., Kemp, M., Sánchez Serrano, A., & Schnabel, I. (2019). *Regulatory Complexity And The Quest For Robust Regulation* (Reports of the Advisory Scientific Committee, No. 8). European Systemic Risk Board.
https://www.esrb.europa.eu//pub/pdf/asc/esrb.asc190604_8_regulatorycomplexityquest_robustregulation~e63a7136c7.en.pdf
- Genschel, P., & Plumper, T. (1997). Regulatory Competition And International Co-Operation. *Journal of European Public Policy*, 4(4), 626–642.
<https://doi.org/10.1080/135017697344109>
- Gerring, J. (2017). Qualitative Methods. *Annual Review of Political Science*, 20(1), 15–36.
<https://doi.org/10.1146/annurev-polisci-092415-024158>
- Gerring, J., & Cojocaru, L. (2016). Selecting Cases For Intensive Analysis. *Sociological Methods & Research*, 45(3), 392–423. <https://doi.org/10.1177/0049124116631692>
- Goodhart, C. (2011). *The Basel Committee On Banking Supervision: A History Of The Early Years, 1974-1997*. Cambridge University Press.
<https://doi.org/10.1017/CBO9780511996238>
- Griffith-Jones, S., & Persaud, A. (2003, April 24-25). The Political Economy Of Basle II And Implications For Emerging Economies [Seminar Contribution]. Seminar on Management of Volatility, Financial Liberalization and Growth in Emerging Economies, Chile.
<http://www.stephanyj.net/papers/THEPOLITICALECONOMYOFBASLEIANDIMPLICATIONS2003.pdf>
- Gubitz, B. (2013). *Das Ende Des Landesbankensektors*. Gabler Verlag.
<https://doi.org/10.1007/978-3-658-01673-9>

- Hakenes, H., & Schnabel, I. (2014). *Regulatory Capture By Sophistication* (CEPR Discussion Paper, No. 10100). CEPR. <https://doi.org/10.2139/ssrn.2531688>
- Haldane, A. G. (2013, April 10). *Turning The Red Tape Tide* [Dinner Speech]. International Financial Law Review Dinner. Bank of England. <https://www.bankofengland.co.uk/-/media/boe/files/speech/2013/turning-the-red-tape-tide>
- Haldane, A. G., & Madouros, V. (2012). *The Dog And The Frisbee* [Speech]. Federal Reserve Bank of Kansas City's 366th Economic Policy Symposium. Bank for International Settlements. <https://www.bis.org/review/r120905a.pdf>
- Hawke, J. D. (2003a). *Public Testimony Before The US House Of Representatives*. Office of the Comptroller of the Currency. <https://www.occ.treas.gov/news-issuances/congressional-testimony/2003/pub-test-2003-51-written.pdf>
- Hawke, J. D. (2003b, December 16). *Basel II: A Brave New World For Financial Institutions?* [Speech]. American Academy Berlin. Office of the Comptroller of the Currency. <https://www.occ.gov/news-issuances/speeches/2003/pub-speech-2003-99.pdf>
- Helleiner, E. (2014). *The Status Quo Crisis*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199973637.001.0001>
- Hellmann, T. F., Murdock, K. C., & Stiglitz, J. E. (2000). Liberalization, Moral Hazard In Banking, And Prudential Regulation: Are Capital Requirements Enough? *American Economic Review*, 90(1), 147–165.
- Hellwig, M. (2010). Capital Regulation After The Crisis: Business As Usual? *CESifo DICE Report*, 8(2), 40–46. <https://doi.org/10.1007/s10273-011-1262-2>
- Hellwig, M. (2017). *Precautionary Recapitalisations: Time For A Review (In-Depth-Analysis Provided In Advance Of The Public Hearing With The Chair Of The Single Resolution Board In The EP's Economic And Monetary Affairs Committee On 11 July 2017)*. [http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/602089/IPOL_IDA\(2017\)602089_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/602089/IPOL_IDA(2017)602089_EN.pdf)
- Hellwig, M. (2018, June 15-16). *Germany And The Financial Crises 2007 – 2017, Case Study On A Past Crisis: The Case Of Germany*. [Conference Contribution]. 4th Annual Macprudential Conference of the Swedish Riksbank. <https://www.riksbank.se/globalassets/media/konferenser/2018/germany-and-financial-crises-2007-2017.pdf>
- Hellwig, M., & Admati, A. (2013). *Des Bankers Neue Kleider* (2nd ed.). FinanzBuch Verlag.
- Hoggarth, G., Reis, R., & Saporta, V. (2002). Costs Of Banking System Instability: Some Empirical Evidence. *Journal of Banking and Finance*, 26(5), 825–855. [https://doi.org/10.1016/S0378-4266\(01\)00268-0](https://doi.org/10.1016/S0378-4266(01)00268-0)

- Holtorf, C., Muck, M., & Rudolf, M. (2001). The New Basel Capital Accord. *Risk Management, April*, 79–98. https://doi.org/10.1007/3-540-26993-2_4
- Höpfner, B. (2014). *CRD IV - New Regulatory Package For Banks In Force*. Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin). https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Fachartikel/2014/fa_bj_1401_start_crd_iv_crr_en.html
- Howarth, D., & Quaglia, L. (2013). Banking On Stability: The Political Economy Of New Capital Requirements In The European Union. *Journal of European Integration*, 35(3), 333–346. <https://doi.org/10.1080/07036337.2013.774780>
- Howarth, D., & Quaglia, L. (2016a). The Comparative Political Economy Of Basel III In Europe. *Policy and Society*, 35(3), 205–214. <https://doi.org/10.1016/j.polsoc.2016.09.003>
- Howarth, D., & Quaglia, L. (2016b). *The Political Economy Of European Banking Union*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780198727927.001.0001>
- HSH Nordbank. (2003). *Stark In Die Zukunft: HSH Nordbank AG Geschäftsbericht 2003*. https://www.hcob-bank.de/media/pdf_3/investorrelations/geschaeftsber/2003/gb_hsh_2003_de.pdf
- Huber, J. D., & Shipan, C. R. (2002). *Deliberate Discretion?* Cambridge University Press. <https://doi.org/10.1017/CBO9780511804915>
- Ingves, S. (2016). *Finalising Basel III: Coherence, Calibration And Complexity*. [Conference Contribution]. Second Conference on Banking Development, Stability and Sustainability. <http://www.bis.org/speeches/sp161202.pdf%5Cnpapers3://publication/uuid/CCDF9EED-4ABD-4124-BABF-7845CDF818CE>
- Institute of International Finance. (2001). *Report Of The Working Group On Operational Risk*. <https://www.bis.org/bcbs/ca/iiwgonopri.pdf>
- Institute of International Finance. (2003). *IIF Response To The Third Consultative Paper Of The Basel Committee On Banking Supervision*. <https://www.bis.org/bcbs/cp3/inofinfi.pdf>
- Kane, E. J. (2007). Basel II: A Contracting Perspective. *Journal of Financial Services Research*, 32(1–2), 39–53. <https://doi.org/10.1007/s10693-007-0020-5>
- Kapstein, E. B. (1989). Resolving The Regulator's Dilemma: International Coordination Of Banking Regulations. *International Organization*, 43(2), 323–347. <https://doi.org/10.1017/S0020818300032938>
- Kapstein, E. B. (1992). Between Power And Purpose: Central Bankers And The Politics Of Regulatory Convergence. *International Organization*, 46(1), 265–287. <https://doi.org/10.1017/S0020818300001508>

- Kapstein, E. B. (2006). *Architects Of Stability?: International Cooperation Among Financial Supervisors* (BIS Working Papers, No. 199). <http://www.bis.org/publ/work199.htm>
- Kara, G. I. (2016). Bank Capital Regulations Around the World: What Explains the Differences? *Finance and Economics Discussion Series*, 2016(057), 1–40. <https://doi.org/10.17016/feds.2016.057>
- Kette, S. (2009). *A Cognitive Mode Of Rule-Finding In Banking Regulation The Consultative Process Of Basel II Examined* (GARNET Working Paper, 69/09). <https://www2.warwick.ac.uk/fac/soc/pais/research/researchcentres/csgr/garnet/workpapers/6909.pdf>
- Kim, T., Koo, B., & Park, M. (2013). Role Of Financial Regulation And Innovation In The Financial Crisis. *Journal of Financial Stability*, 9(4), 662–672. <https://doi.org/10.1016/j.jfs.2012.07.002>
- Klomp, J., & Haan, J. d. (2012). Banking Risk And Regulation: Does One Size Fit All? *Journal of Banking and Finance*, 36(12), 3197–3212. <https://doi.org/10.1016/j.jbankfin.2011.10.006>
- Laeven, L., & Valencia, F. (2018). *Systemic Banking Crises Revisited* (IMF Working Paper, 18/206). International Monetary Fund. <https://www.imf.org/en/Publications/WP/Issues/2018/09/14/Systemic-Banking-Crises-Revisited-46232>
- Laeven, L., Valencia, F., Bhatia, A., Brandao, L., Chivakul, M., Christofides, C., Claessens, S., Cortavarria-Checkley, L., Detragiache, E., Forni, L., Gorton, G., De Imus, P., Kinoshita, Y., Miyoshi, T., Badia, M. M., Petrova, I., Rozhkov, D., & Salinas, G. (2012). *Systemic Banking Crises Database: An Update* (IMF Working Paper, 12/163). <https://www.imf.org/external/pubs/ft/wp/2012/wp12163.pdf>
- Lall, R. (2012). From Failure To Failure: The Politics Of International Banking Regulation. *Review of International Political Economy*, 19(4), 609–638. <https://doi.org/10.1080/09692290.2011.603669>
- Landtag Schleswig-Holstein. (2011). *Bericht Und Beschlussempfehlung Des Ersten Parlamentarischen Untersuchungsausschusses HSH Nordbank (Drucksache 17/1675)*. <http://www.landtag.ltsh.de/infothek/wahl17/drucks/1600/drucksache-17-1675.pdf>
- LeBor, A. (2013). *Tower Of Basel: The Shadowy History Of The Secret Bank That Runs The World*. PublicAffairs.
- Leech, B. L. (2002). Asking Questions: Techniques For Semistructured Interviews. *PS - Political Science and Politics*, 35(4), 665–668. <https://doi.org/10.1017/S1049096502001129>
- Levine, R. (2012). The Governance Of Financial Regulation: Reform Lessons From The Recent Crisis. *International Review of Finance*, 12(1), 39–56. <https://doi.org/10.1111/j.1468-2443.2011.01133.x>

- Levy, J. S. (2008). Case Studies: Types, Designs, And Logics Of Inference. *Conflict Management and Peace Science*, 25(1), 1–18. <https://doi.org/10.1080/07388940701860318>
- Lokdam, H. (2020). 'We Serve The People Of Europe': Reimagining The ECB's Political Master In The Wake Of Its Emergency Politics. *Journal of Common Market Studies*, 58(4), 978–998. <https://doi.org/10.1111/jcms.13014>
- Mackenzie, K. (2013, January 7). Banks, Here's Your New Liquidity Regime. Now Stop Blaming Us. Love, Basel. *FT Alphaville*. <https://ftalphaville.ft.com/2013/01/07/1323033/banks-heres-your-new-liquidity-regime-now-stop-blaming-us-love-basel/>
- Mariathanan, M., & Merrouche, O. (2014). The Manipulation Of Basel Risk-Weights. *Journal of Financial Intermediation*, 23(3), 300–321. <https://doi.org/10.1016/j.jfi.2014.04.004>
- Markgraf, J., & Rosas, G. (2019). On Board with Banks: Do Banking Connections Help Politicians Win Elections? *The Journal of Politics*, 81(4), 1357–1370. <https://doi.org/10.1086/704435>
- Masters, B. (2012a, May 9). Regulation: Wariness Over EU's Level Playing Field. *Financial Times*. <https://www.ft.com/content/acbee398-8f9b-11e1-98b1-00144feab49a>
- Masters, B. (2012b, June 11). Bank Warning For Europe And Japan. *Financial Times*. <https://www.ft.com/content/949db758-b3d6-11e1-a3db-00144feabdc0>
- Mattli, W., & Woods, N. (2009). In Whose Benefit? Explaining Regulatory Change In Global Politics. *The Politics Of Global Regulation*, 23(3), 1-43. https://doi.org/10.1111/j.1468-0491.2010.01493_3.x
- McDonough, W. J. (2003, February 11). *Implementing The New Basel Accord* [Speech]. *Global Association of Risk Professiona*). Federal Reserve Bank of New York. <https://www.newyorkfed.org/newsevents/speeches/2003/mcd030211>
- McLaughlin, P., & Reese, C. (2016). *Against Regulatory Complexity*. Mercatus Center. https://www.mercatus.org/expert_commentary/against-regulatory-complexity
- Migueis, M. (2018). *Is Operational Risk Regulation Forward-Looking And Sensitive To Current Risks?* (FEDS Notes). Board of Governors of the Federal Reserve System. <https://doi.org/10.17016/2380-7172.2198>
- Minsky, H. P. (1992). *The Financial Instability Hypothesis* (The Jerome Levy Economics Institute Working Paper, No. 74). <https://doi.org/10.2139/ssrn.161024>
- Moosa, I. A. (2008). *Quantification Of Operational Risk Under Basel II: The Good, Bad And Ugly*. Palgrave Macmillan. <https://doi.org/10.1057/9780230595149>
- Newman, A., & Posner, E. (2016). Transnational Feedback, Soft Law, And Preferences In Global Financial Regulation. *Review of International Political Economy*, 23(1), 123–152. <https://doi.org/10.1080/09692290.2015.1104375>

- Nouy, D. (2017, September 15). *Gaming The Rules Or Ruling The Game? – How To Deal With Regulatory Arbitrage* [Speech]. *33rd SUELF Colloquium*. European Central Bank: Banking Supervision.
<https://www.bankingsupervision.europa.eu/press/speeches/date/2017/html/ssm.sp170915.en.html>
- Nugent, N., & Rhinard, M. (2019). The ‘Political’ Roles Of The European Commission. *Journal of European Integration*, *41*(2), 203–220. <https://doi.org/10.1080/07036337.2019.1572135>
- Oatley, T., Winecoff, W. K., Pennock, A., & Danzman, S. B. (2013). The Political Economy Of Global Finance: A Network Model. *Perspectives on Politics*, *11*(1), 133–153.
<https://doi.org/10.1017/S1537592712003593>
- Office of the Comptroller of the Currency. (2002, June 6). *The Road To Basel II: Good Intentions And Imposing Challenges*. [Press Release]. <https://www.occ.gov/news-issuances/news-releases/2002/nr-occ-2002-49.html>
- Pagliari, S., & Wilf, M. (2020). Regulatory Novelty After Financial Crises: Evidence From International Banking And Securities Standards, 1975–2016. *Regulation & Governance*, *1*-19. <https://doi.org/10.1111/rego.12346>
- Pattison, J. C. (2006). International Financial Cooperation And The Number of Adherents: The Basel Committee And Capital Regulation. *Open Economies Review*, *17*(4–5), 443–458.
<https://doi.org/10.1007/s11079-006-0358-6>
- Posner, E. (2009). Making Rules For Global Finance: Transatlantic Regulatory Cooperation At The Turn Of The Millennium. *International Organization*, *63*(4), 665–699.
<https://doi.org/10.1017/S0020818309990130>
- Putnam, R. D. (1988). Diplomacy And Domestic Politics: The Logic Of Two-Level Games
Diplomacy And Domestic Politics: The Logic Of Two-Level Games Introduction: The Entanglements Of Domestic And International Politics. *International Organization*, *42*(3), 427–460.
- Quaglia, L. (2007). The Politics Of Financial Services Regulation And Supervision Reform In The European Union. *European Journal of Political Research*, *46*(2), 269–290.
<https://doi.org/10.1111/j.1475-6765.2006.00695.x>
- Quaglia, L. (2019). The Politics Of State Compliance With International “Soft Law” In Finance. *Governance*, *32*(1), 45–62. <https://doi.org/10.1111/gove.12344>
- Quaglia, L. (2020). The Politics Of Regime Complexity In International Derivatives Regulation. In *The Politics of Regime Complexity in International Derivatives Regulation*. Oxford University Press. <https://doi.org/10.1093/oso/9780198866077.001.0001>
- Quaglia, L., & Spendzharova, A. (2017). Post-Crisis Reforms In Banking: Regulators At The Interface Between Domestic And International Governance. *Regulation & Governance*, *11*(4), 422–437. <https://doi.org/10.1111/rego.12157>

- Quaglia, L., & Spendzharova, A. (2019). Regulators And The Quest For Coherence In Finance: The Case Of Loss Absorbing Capacity For Banks. *Public Administration*, 97(3), 499–512. <https://doi.org/10.1111/padm.12549>
- Quillin, B. (2008). *Regulators And The Quest For Coherence In Finance: The Case Of Loss Absorbing Capacity For Banks*. Routledge. <https://doi.org/10.4324/9780203930281>
- Reinhart, C. M., & Reinhart, V. (2008). *Capital Flow Bonanzas: An Encompassing View Of The Past and Present* (NBER Working Paper Series, No. 14321). <https://doi.org/10.3386/w14321>
- Reinhart, C. M., & Rogoff, K. S. (2009). *This Time Is Different: Eight Centuries Of Financial Folly*. Princeton University Press.
- Reinhart, C. M., & Rogoff, K. S. (2013). Banking Crises: An Equal Opportunity Menace. *Journal of Banking and Finance*, 37(11), 4557–4573. <https://doi.org/10.1016/j.jbankfin.2013.03.005>
- Restoy, F. (2018, July 4). *Proportionality In Banking Regulation* [Speech]. *The Westminster Business Forum Keynote Seminar: Building A Resilient UK Financial Sector - Next Steps For Prudential Regulation, Structural Reform And Mitigating Risks*. Bank for International Settlements. <https://www.bis.org/speeches/sp180704b.htm>
- Rixen, T. (2013). Why Reregulation After The Crisis Is Feeble: Shadow Banking, Offshore Financial Centers, And Jurisdictional Competition. *Regulation & Governance*, 7(4), 435–459. <https://doi.org/10.1111/rego.12024>
- Rosenbluth, F., & Schaap, R. (2003). The Domestic Politics Of Banking Regulation. *International Organization*, 57(2003), 307–336. <https://doi.org/10.1017/S0020818303572034>
- Ruggie, J. G. (1982). International Regimes, Transactions, And Change: Embedded Liberalism In The Postwar Economic Order. *International Organization*, 36(2), 379–415. <https://doi.org/10.1017/S0020818300018993>
- Sächsischer Rechnungshof. (2009). *Sonderbericht Nach §99 SäHO: Landesbank Sachsen Girozentrale*. https://www.rechnungshof.sachsen.de/SRH_Sonderbericht_SLB_2009.pdf
- Sachverständigenrat (SVR). (2017). *Jahresgutachten 2017/18*. <https://www.sachverstaendigenrat-wirtschaft.de/publikationen/jahresgutachten/fruehere-jahresgutachten/jahresgutachten-201718.html>
- Schimmelfennig, F. (2016). A Differentiated Leap Forward: Spillover, Path-Dependency, And Graded Membership In European Banking Regulation. *West European Politics*, 39(3), 483–502. <https://doi.org/10.1080/01402382.2016.1143244>
- Singer, D. A. (2007). *Regulating Capital: Setting Standards For The International Financial System*. Cornell University Press. <https://www.jstor.org/stable/10.7591/j.ctt7z6qv>

- Steil, B. (2013). *The Battle Of Bretton Woods: John Maynard Keynes, Harry Dexter White, And The Making Of A New World Order*. Princeton University Press.
<https://press.princeton.edu/books/ebook/9781400846573/the-battle-of-bretton-woods>
- Stieber, H. (2016). *Complexity And Better Financial Regulation*. OECD Insights Blog.
<http://oecdinsights.org/2016/08/31/complexity-and-better-financial-regulation/>
- Tarullo, D. (2008). *Banking on Basel: The Future Of International Financial Regulation*. Peterson Institute for International Economics.
<https://econpapers.repec.org/bookchap/iiepress/4235.htm>
- The Economist. (1999, April 29). *Banking Regulation - Basle Brush*.
<https://www.economist.com/finance-and-economics/1999/04/29/basle-brush>
- The Economist. (2014, January 18). *Leverage Ratios - Leavened*.
<https://www.economist.com/finance-and-economics/2014/01/18/leavened>
- Tooze, A. (2018). *Crashed: How A Decade Of Financial Crises Changed The World*. Penguin Books. <https://www.penguinrandomhouse.com/books/301357/crashed-by-adam-tooze/>
- Traut, F. (2018). Banking Crisis Inventions In Germany And Italy: The Unpleasant Case Of The New European Bank Resolution Framework. In J. Hien & C. Joerges (Eds.), *Responses of European economic cultures to Europe's crisis politics : the example of German-Italian discrepancies* (pp. 108–119). European University Institute.
<http://cadmus.eui.eu/handle/1814/59884>
- Tsingou, E. (2015). Club Governance And The Making Of Global Financial Rules. *Review of International Political Economy*, 22(2), 225–256.
<https://doi.org/10.1080/09692290.2014.890952>
- Tucker, P. (2014). *Regulatory Reform, Stability And Central Banking*. Brookings Institution.
<https://www.brookings.edu/research/regulatory-reform-stability-and-central-banking/>
- Underhill, G. R. D., & Zhang, X. (2008). Setting The Rules: Private Power, Political Underpinnings, And Legitimacy In Global Monetary And Financial Governance. *International Affairs*, 84(3), 535–554. <https://doi.org/10.1111/j.1468-2346.2008.00723.x>
- Véron, N. (2017, July 13). *Precautionary Recapitalisation: Time For A Review?* Bruegel.
<https://www.bruegel.org/2017/07/precautionary-recapitalisation-time-for-a-review/>
- Williams, J. L. (2005). *Testimony Before The US House Of Representatives Subcommittee On Financial Institutions And The Subcommittee On Domestic And International Monetary Policy, Trade And Technology*. Office of the Comptroller of the Currency.
<https://occ.gov/news-issuances/congressional-testimony/2005/pub-test-2005-46-written.pdf>
- Wood, D. R. (2005). *Governing Global Banking: The Basel Committee And The Politics Of*

Financial Globalisation. Gower Publishing.

Wyplosz, C. (2019). Limits To The Independence Of The ECB. *Review of World Economics*, 155(1), 35–41. <https://doi.org/10.1007/s10290-018-0328-2>

Young, K. (2012). Transnational Regulatory Capture? An Empirical Examination Of The Transnational Lobbying Of The Basel Committee On Banking Supervision. *Review of International Political Economy*, 19(4), 663–688. <https://doi.org/10.1080/09692290.2011.624976>

Young, K. (2013). Policy Takers Or Policy Makers? The Lobbying Of Global Banking Regulators. *Business Horizons*, 56(6), 691–701. <https://doi.org/10.1016/j.bushor.2013.07.010>

Young, K., & Pagliari, S. (2017). Capital United? Business Unity In Regulatory Politics And The Special Place Of Finance. *Regulation & Governance*, 11(1), 3–23. <https://doi.org/10.1111/rego.12098>

Young, K., & Park, S. H. (2013). Regulatory Opportunism: Cross-National Patterns In National Banking Regulatory Responses Following The Global Financial Crisis. *Public Administration*, 91, 561–581. <https://doi.org/10.1111/j.1467-9299.2012.02102.x>

Zingales, L. (2017, February 24). Italy's Non-Existent Bank Rescue Strategy. *IT24*. <http://www.italy24.ilsole24ore.com/art/business-and-economy/2017-02-24/italy-s-non-existent-bank-rescue-strategy--165915.php?uuid=AE3n0xc>

VI.1 European Union legislation used in this book

Directive 2006/48/EC. *Directive Relating To The Taking Up And Pursuit Of The Business Of Credit Institutions*. European Parliament, Council of the European Union. <https://eur-lex.europa.eu/eli/dir/2006/48/oj>

Directive 2006/49/EC. *Directive On The Capital Adequacy Of Investment Firms And Credit Institutions*. European Parliament, Council of the European Union. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32006L0049>

Directive 2013/36/EU. *Capital Requirements Directive IV*. European Parliament, Council of the European Union. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:176:0338:0436:En:PDF>

Regulation 575/2013/EU. *Capital Requirements Regulation*. European Parliament, Council of the European Union. <http://eur-lex.europa.eu/oj/direct-access.html>

Directive 2014/59/EU. *Bank Recovery And Resolution Directive*. European Parliament, Council of the European Union. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0059&from=EN>

Regulation 806/2014/EU. *Single Resolution Mechanism*. European Parliament, Council of the European Union. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0806&from=EN>

Directive 2019/879/EU Amending Directive 2014/59/EU. *Bank Recovery And Resolution Directive 2*. European Parliament, Council of the European Union. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0879&from=EN>

VII Appendix

VII.1 Mathematical argument

The economic model in chapter III is already relatively detailed with regard to its mathematical argument. This section provides some more intermediate steps towards its results.

VII.1.1 *Static optimization without negotiation*

The basic utility function of state i is the difference between benefits and costs, which depend on the level of regulation: $U_i = B_i(r) - C_i(r)$. This utility function is maximized where $B'_i(r) = C'_i(r)$, the r that yields this result is called r_i^* for country i .

The shapes of $C_i(r)$ and $B_i(r)$ are such that this is a maximum: $C_i(1) > 0$, $C'_i(r) < 0$, $C''_i(r) > 0$ and $B'_i(r) < 0$, $B''_i(r) < 0$. These properties will be important later and they apply to every country.

VII.1.2 *Multiple actors and unitary world regulation*

The basic assumption of the theory with multiple actors is that the properties from the static, unilateral optimization apply but that the individual cost and benefit functions look different within the set of these assumptions. This means that the resulting individual optimum is different for countries i and j : $r_i^* \neq r_j^*$. For convenience, it is assumed that $r_i^* > r_j^*$.

If these two countries would have to agree on a common set of regulation, they would go for something between their two optima: $r_{World} \in [r_j^*, r_i^*]$. Anything else would make both worse off.

The common utility function for a world with these two economies would be $U_{World} = B_i(r) + B_j(r) - [C_i(r) + C_j(r)]$, which is maximized for $r = r_{World}^*$ if $B'_i(r_{World}^*) + B'_j(r_{World}^*) = C'_i(r_{World}^*) + C'_j(r_{World}^*)$ under the same assumptions as above for benefit and cost functions.

This directly yields equation (2). The result (2.1)

$$\frac{B'_i(r_{World}^*)}{C'_i(r_{World}^*)} < \frac{B'_i(r_i^*)}{C'_i(r_i^*)} = 1$$

directly follows from shape of both the benefit and cost functions of country i as well as the fact that $r_i^* > r_{World}^*$. Equivalently, the opposite goes for j . The common regulation will not maximize their individual utility but will remain sub-optimal for at least one player.

This optimal common regulation as well as the individual optima form the baselines that one can compare the following results against.

VII.1.3 Regulatory corridors

The changed assumption now is that common regulation does not have to be one single value $r_{World} \in [r_j^*, r_i^*]$ anymore but can be a set $[r_{j,World}, r_{i,World}] \subseteq [0,1]$ with $r_{j,World}$ and $r_{i,World}$ representing the upper and lower bound of a convex set of regulatory regimes that are possible under the international regulatory regime. The goal here is now to show that regulation under this set can be welfare-improving for i and j compared to a single regulatory regime.

The switch from a single vector of rules r to a set $[r_{j,World}, r_{i,World}]$ comes at a cost in form of an inflating factor of the cost function, which depends on the size of this set: $\gamma(|r_{i,World} - r_{j,World}|)$ with $\gamma(|r_{i,World} - r_{j,World}|) \geq 1$ with $\gamma(0) = 1$ and $\gamma' \geq 0$ (with $\gamma'(0) = 0$), $\gamma'' = 0$.

In a first auxiliary examination, the model looks at how implementing such a regime unilaterally would work out for country i (country j equivalently). This means that there is a coordinated $r_{World}^C \in (r_j^*, r_i^*)$ but i deviates from that and introduces a new regulatory set unilaterally by setting its regulatory level at $r_{i,World} \in [r_{World}^C, 1]$. The new utility function for i is

$$U_{i,World} = B_i(r_{i,World}) - \gamma(|r_{i,World} - r_{World}^C|)C_i(r_{i,World})$$

This is maximized for $r_{i,World} = r_{i,World}^*$ iff

$$0 = B'_i(r_{i,World}^*) - \gamma'(|r_{i,World}^* - r_{World}^C|)C_i(r_{i,World}^*) - \gamma(|r_{i,World}^* - r_{World}^C|)C'_i(r_{i,World}^*)$$

This yields equation (4), which allows us to compare the respective slopes of the curves at the respective point. This means that we can compare the optimal level of regulation for i with the case that it adheres to the common standard $r_{World}^C \in (r_j^*, r_i^*)$:

$$\frac{B'_i(r_{i,World}^*)}{C'_i(r_{i,World}^*)} = \underbrace{\frac{\gamma'(|r_{i,World}^* - r_{World}^C|)C_i(r_{i,World}^*)}{C'_i(r_{i,World}^*)}}_{\leq 0} + \underbrace{\gamma(|r_{i,World}^* - r_{World}^C|)}_{\geq 1}$$

In order for this equation to hold, (i) either $r_{i,World}^* = r_{World}^C$ must hold, which would be adherence to the international regime or (ii) the two terms on the right-hand-side of the equation balance themselves out such that the equation holds with $r_{i,World}^* \neq r_{World}^C$. (i) can only hold for $r_{i,World}^* = r_{World}^C = r_i^*$ as only at that level of regulation $B'_i = C'_i$ holds, which corresponds with $r_{i,World}^* = r_{World}^C$. As soon as the common level of regulation deviates from the individual optimum of country i , (ii) takes effect and $r_{i,World}^* > r_{World}^C$ will take effect to balance out the two terms. Note that the last ratio is just for illustrative purposes, the argument can already be seen in the pure optimization as this only holds for $r_{i,World}^* = r_{World}^C$.

This argument can easily be generalized for the case when both players might deviate (with broadly abstracting from retaliation and some contagion effects that would make one level of regulation dependent on that of its peer). The Envelope Theorem allows such generalization and

yields the eventual Proposition 1, the regulatory corridors-result: as soon as regulatory preferences diverge, it is worthwhile to deviate from them for at least one party.

VII.1.4 Social planner

The social planner was seen as an optimizer for the non-complex outcome on the way to Proposition 1. The derivation of Proposition 2 now allows for complex solutions by the social planner. This means that the planner has to take into account the same functions as the single players. The collective utility function will be equation (6):

$$U_{World}^C = B_i(r_{i,World}) + B_j(r_{j,World}) - \gamma(|r_{i,World} - r_{j,World}|)[C_i(r_{i,World}) + C_j(r_{j,World})]$$

Now, what needs to be done in order to show that this planner would also introduce a regulatory corridor is that they would deviate from the previously derived common regulatory regime if they could do so. The proof here rather assumes that this deviation is equal in both directions, which is a strong assumption but simplifies the calculations. Most importantly, this simplification does not affect the qualitative result of whether a regulatory corridor would emerge under the regime of a social planner.

If we start from a hypothetical optimum r_{World}^C that would maximize global utility if there was no option for complexity, we can write the boundaries of the regulatory corridor as $r_{i,World}^C = r_{World}^C + d$ for the upper bound and $r_{j,World}^C = r_{World}^C - d$ for the lower bound; d is the divergence from the non-complex optimum. If the planner would introduce a $d > 0$, they would go for a regulatory corridor instead of a single solution.

Optimization of the utility function with respect to d yields equation (8)

$$\begin{aligned} B'_i(r_{World}^C + d) - B'_j(r_{World}^C - d) \\ = 2\gamma'[C_i(r_{World}^C + d) + C_j(r_{World}^C - d)] \\ + \gamma(2d)[C'_i(r_{World}^C + d) - C'_j(r_{World}^C - d)] \end{aligned}$$

which only holds for $d = 0$ if

$$B'_i(r_{World}^C) - B'_j(r_{World}^C) = C'_i(r_{World}^C) - C'_j(r_{World}^C). \quad (16)$$

This means that only if (9) holds, the planner will not deviate from the common solution.

This equation can only hold for a single value r_{World}^C if these benefit and cost functions are the same, which would mean that they would also yield the same optimal regulatory regimes for individual countries: $r_i^* = r_j^* = r_{World}^* = r_{World}^C$. For any other scenario, the assumption about the shape of the cost and benefit curves results in this equation not holding. If we, for simplicity, assume that $r_i^* = r_{World}^C$ then $B'_i(r_{World}^C) = C'_i(r_{World}^C)$, then (9) becomes $B'_j(r_{World}^C) = C'_j(r_{World}^C)$, which only holds if $r_j^* = r_{World}^C$. This becomes only clearer when $r_{World}^C \in (r_j^*, r_i^*)$ as the slopes of the curves evolve in contrary directions.

Hence, as soon as the benefit and cost functions deviate, which means that optimal levels of regulation (and, thus, preferences of states) are not aligned, the social planner will introduce a regulatory corridor instead of a single set of rules.

VII.1.5 Intertemporal case

The intertemporal case with an infinite time horizon is directly connected to the static case – especially with regard to the crucial parts of the proof.

The new intertemporal optimization problem (indicated by an I in the respective indicator of regulation) in international regulation for a country i in period $t = 0$ now is expressed by the utility function (10)

$$U_i(r_{i,World,I}) = \sum_{t=0}^{\infty} \left[\frac{1}{(1+\delta)^t} B_i(r_{i,World,I}) \right] - \sum_{t=0}^{\infty} \left[\frac{1}{(1+\delta)^{t+1}} \gamma(|r_{i,World,I} - r_{j,World,I}|) C_i(r_{i,World,I}) \right]$$

with $\delta > 0$ being an implicit interest rate to discount future costs and benefits that is the same across players. Costs are realized later than benefits, which is already expressed in the equation. The fraction $0 < \frac{1}{(1+\delta)} < 1$ is subsequently renamed the discount factor β for convenience. The arguments equivalently apply to j .

For purposes of comparison, the optimization by i in case of it unilaterally choosing its regulatory regime in an intertemporal environment ($\gamma(|r_{i,World} - r_{j,World}|) = 1$): $r_{i,World,I}$

$$U_i(r_{i,World}) = \sum_{t=0}^{\infty} [\beta^t B_i(r_{i,World,I})] - \sum_{t=0}^{\infty} [\beta^{t+1} C_i(r_{i,World,I})]$$

And simple optimization with respect to $r_{i,World}$ yields the result (I call the optimal level of regulation $r_{i,World,I}^*$)

$$B'_i(r_{i,World,I}^*) \sum_{t=0}^{\infty} \beta^t = C'_i(r_{i,World,I}^*) \sum_{t=0}^{\infty} \beta^{t+1}$$

$$\Leftrightarrow B'_i(r_{i,World,I}^*) \sum_{t=0}^{\infty} \beta^t = C'_i(r_{i,World,I}^*) \sum_{t=0}^{\infty} \beta^t - C'_i(r_{i,World,I}^*)$$

By applying geometric series, this can be simplified to

$$B'_i(r_{i,World,I}^*) \frac{1}{1-\beta} = C'_i(r_{i,World,I}^*) \frac{1}{1-\beta} - C'_i(r_{i,World,I}^*)$$

which then yields result (12)

$$\frac{B'_i(r_{i,World,I}^*)}{C'_i(r_{i,World,I}^*)} = \beta \in (0,1)$$

This means that the optimal ratio between slopes of cost and benefit function is smaller than 1 (compared to 1 in the static case), which is because of the discounting of future costs. These costs feed less into the calculation than in the static case.

If we allow for deviations between $r_{i,World}$ and $r_{j,World}$, the corridors solution would come from optimization of U_i with respect to $r_{i,World}$:

$$\begin{aligned} \frac{\partial U_i}{\partial r_{i,World,I}} &= \sum_{t=0}^{\infty} [\beta^t B'_i(r_{i,World,I})] - \sum_{t=0}^{\infty} [\beta^{t+1} \gamma'(|r_{i,World,I} - r_{j,World,I}|) C_i(r_{i,World,I})] \\ &\quad - \sum_{t=0}^{\infty} [\beta^{t+1} \gamma(|r_{i,World,I} - r_{j,World,I}|) C'_i(r_{i,World,I})] \stackrel{!}{=} 0 \\ \Leftrightarrow \frac{\sum_{t=0}^{\infty} [\beta^t B'_i(r_{i,World,I}^*)]}{\sum_{t=0}^{\infty} [\beta^{t+1} C'_i(r_{i,World,I}^*)]} &= \gamma(|r_{i,World,I}^* - r_{j,World,I}^*|) + \frac{\gamma'(|r_{i,World,I}^* - r_{j,World,I}^*|) \sum_{t=0}^{\infty} [\beta^{t+1} C_i(r_{i,World,I}^*)]}{C'_i(r_{i,World,I}^*)} \end{aligned}$$

This equation can be further simplified by making use of geometric series:

$$\begin{aligned} &\frac{\frac{1}{1-\beta} B'_i(r_{i,World,I}^*)}{\frac{1}{1-\beta} C'_i(r_{i,World,I}^*) - C'_i(r_{i,World,I}^*)} \\ &= \gamma(|r_{i,World,I}^* - r_{j,World,I}^*|) \\ &\quad + \frac{\gamma'(|r_{i,World,I}^* - r_{j,World,I}^*|) C_i(r_{i,World,I}^*) \left(\frac{1}{1-\beta} - 1\right)}{C'_i(r_{i,World,I}^*)} \end{aligned}$$

This then yields the result (15)

$$\begin{aligned} \frac{B'_i(r_{i,World,I}^*)}{C'_i(r_{i,World,I}^*)} &= \underbrace{\beta}_{0 < \beta < 1} \underbrace{\gamma(|r_{i,World,I}^* - r_{j,World,I}^*|)}_{\geq 1} \\ &\quad + \underbrace{\frac{\gamma'(|r_{i,World,I}^* - r_{j,World,I}^*|) C_i(r_{i,World,I}^*) \left(\frac{1}{1-\beta} - 1\right)^2}{C'_i(r_{i,World,I}^*) \frac{1}{1-\beta}}}_{\leq 0} \end{aligned}$$

This ratio would then have to be compared to a common level of regulation in the intertemporal case. This follows the same argument as for the static case: the left-hand-side ratio comes closer to the optimum of result (15) by deviating as long as preferences (and this optimal levels of regulation) diverge. The equation is complicated through discount factors but essentially the argument remains the same and does not have to be made again. Thus, this examination yields Proposition 3 that confirms the same results as Proposition 1 for the intertemporal case.

Corollary 1 is based on a verbal argument and does not require further explanation.

VII.2 The case for qualitative methods to evaluate a quantitative model

Besides the apparent upsides of qualitative methods for my endeavor, there are two main reasons that already almost exclude the use of quantitative methods here, which I want to discuss briefly. This is most important as I will later argue that further research could also go into quantitative assessments of complexity.

First, availability of data: My research is concerned with the behavior of states and regulators in the international arena and it is focused on the very abstract concept of regulatory complexity. This is not a topic on which one can raise quantitative data easily – if at all. However, regulators and facilitating entities such as the Bank for International Settlements in Basel (or rather the Basel Committee on Banking Supervision) or the European Commission publish drafts, opinions, and older versions of their documents. This means that much qualitative data is out there and can be analyzed to check whether the predictions of the model apply; just no quantitative data that would allow for statistical analysis.

Second, measurability: Two important inputs to my model, complexity and state preferences, might be difficult to measure numerically. There are approaches to measure complexity ranging from simply counting pages of regulation (Haldane & Madouros, 2012) to sophisticated methods inspired by computer science, which treat regulations like algorithms and look for indicators for complexity (Colliard & Georg, 2020).¹²³ The former might be a very rough proxy for complexity but can also be misleading. Measures that reduce room for maneuvering such as a floor on outputs of efforts to mitigate capital requirements take space but reduce regulatory complexity. They simply apply one ratio to all banks that would have made excessive use of ways to reduce regulatory burdens otherwise. It is also possible to express the same rule in two sentences or on two pages of text. An approach that tests for algorithm-like complexity in regulation, would certainly be more accurate in estimating effective complexity. However, this method is relatively new and has only been applied to a small number of texts. Furthermore, and more important, complexity would be the only be the dependent variable but I have no measure for the most important inputs of the model: state preferences. So, even if I would go through the effort to measure complexity following Colliard & Georg's approach, I would not have reliable explanatory variables without also measuring preferences of states.

Estimating positions of states and other actors can be done in a more reliable, reproduceable, and nuanced way by using qualitative methods and particular cases. One can extract positions of countries by looking at negotiation documents and conducting interviews as well as extrapolating from obvious features of their economic and banking system. One can trace the process of translating these preferences into negotiations and complex accords. Breaking these questions down to individual cases enables me to take a wide array of contributing factors into account, which would be difficult to do in quantitative analysis. This makes qualitative process tracing of

¹²³ Gai et al. (2019) discuss that in more detail. This piece will also be part of my first chapter as it discusses many of the questions that I refer to. They also discuss potential “positive” complexity and adverse effects of complexity.

cases by using interviews and document analysis the preferable strategy to verify or falsify my theoretical claims.

Due to these concerns, it is even clearer that case studies are the way to go for my empirical research. However, these considerations also open new avenues for research when these issues can be addressed. Future research might be able to use techniques from computer science to evaluate the complexity of greater amounts of treaties and accords. To come back to Gerring's (2017) metaphor of a map, my model provides the old-fashioned street map that only shows routes in a generalizable, abstract way and I check it by taking some of the routes directly in the cases. Automated text analysis could serve as some kind of satellite picture that can check the maps on a much bigger scale.

VII.3 List of interviewed institutions

Interviews were confidential and mostly informed my research. If not directly indicated, the results from document analyses and other research are my own and neither refer to interviews with the respective organization or others. When citing from the interviews, regulators and supervisors in a wider sense are referred to as 'Regulator#.._Year', all other interview partners referred to as 'Others'#.._Year'. With some organizations I only conducted one interview, with some I had multiple interviews and interview partners, these are treated as separate interviews in the text.

The institutions and organizations that gave me interviews on this specific book were:

Association of German Banks, Brussels

Centre for European Policy Research

Deutsche Bundesbank

European Central Bank

European Commission

Finance Watch

German Federal Ministry of Finance

VII.4 Publications by the author related to this work

Traut, F. (2018). Banking Crisis Inventions In Germany And Italy: The Unpleasant Case Of The New European Bank Resolution Framework. In J. Hien & C. Joerges (Eds.), *Responses of European economic cultures to Europe's crisis politics : the example of German-Italian discrepancies* (pp. 108–119). European University Institute.
<http://cadmus.eui.eu/handle/1814/59884>