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Eva Becker

Knowledge Capture in Financial Regulation

Data-, Information- and Knowledge-Asymmetries in the US Financial Crisis

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"Politics works in episodes, in short stories each finishing with a collectively binding decision, a symbolic gesture of conclusion. The political system is thus free to turn to new topics or to await feedback from old ones. But what happens with the risks?" (Luhmann 2008, 165)

Abstract

In 2007, the world economy was hit by a financial crisis of systemic nature and global reach. Confronted with the failure of (potentially) *systemically important financial institutions* (SIFIs), governments were forced to make a binary choice: To either rescue these institutions or let them go down, weighing up *moral hazard* and *too-big-to-fail expectations* on the one hand, and the risk of a market breakdown on the other. Financial regulation had apparently not kept pace with the fast-evolving, highly complex financial system. It is therefore widely agreed that the crisis was rooted in *economic as well as governmental failure*.

A growing dependency by policymakers and regulators on private expertise, especially in the area of financial governance, has been an issue of academic debate for some time now. However, the severity of *data-, information- and knowledge-related problems in financial regulation* became only evident in 2007 and 2008: Then, policymakers and regulators worldwide complained about insufficient data, information and expertise to assess the situation adequately, while they were at the same time forced to make far-reaching decisions, including bailouts and extensive financial guarantees. In view of an increased reliance by policymakers and regulators on data, information and knowledge provided by the financial industry, members of the European Parliament warned in their "Call for a Finance Watch" that the absence of *financial counter-expertise* presents a danger to democracy.

The author therefore assesses the US financial crisis as a *crisis of regulatory data, information and knowledge*. The US policy responses to the crisis, particularly the establishment of the Office of Financial Research (OFR), acknowledge and address the identified data, information and knowledge gaps. Yet, their role and nature remains undertheorized to this date. Based on semi-structured interviews with experts conducted by the author – complemented by speeches, testimonies and interviews from the US Financial Crisis Inquiry Commission – this study seeks to add definitional clarity to the debate. It is argued that data-, information- and knowledge-asymmetries represent *different sets of problems* in financial regulation. Moreover, it is shown that the US policy responses to the crisis are characterized by a narrow focus on data and information, while they fail to address a growing knowledge gap between regulators and their regulatees. Drawing on Capture Theory and recent reformulations thereof, we develop *knowledge capture* as a theoretic framework to assess financial regulation under conditions of 21st century complexity.

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1 Introduction

This book is yet another contribution to the large and constantly growing body of literature dealing with the financial crisis of 2007ff. – and at first sight, it looks like everything has been said and written about "the worst financial meltdown since the Great Depression" (Financial Crisis Inquiry Commission 2011, 3).[1] However, a closer look reveals that despite the endless number of research papers and government reports, experts still cannot agree on the exact causes of the crisis. More importantly, among the various contributing factors identified and discussed, some remain vague and require further research. The question whether systemic risk is merely an economic (Schwarcz 2008) or rather a political phenomenon (Levitin 2011) is exemplary in this regard.

Many believed that the music would stop one day, but only few broke off the dance to place lucrative bets on the breakdown instead (Nakamoto and Wighton 2007).[2] The crisis came as a surprise to most – Warren E. Buffet termed it an "economic Pearl Harbor" (Buffett 2010) – yet some saw it coming. Unfortunately,

1 When we speak of the financial crisis of 2007ff. – also labeled the Second Great Contraction (Reinhart and Rogoff 2009) and the Great Recession (Woolley and Ziegler 2012) – we refer to the financial crisis that had its roots in the US mortgage market, spread over to financial institutions engaged in the market for mortgage backed securities (MBSs) and collateralized debt obligations (CDOs), and ultimately infected the entire global financial system. It remains an open question whether the financial crisis is already over or not: Some state it is, some say it is not. The Fed's decision not to raise the federal funds rate as long as US unemployment remains above 6.5 percent indicates that at least the crisis policies are not yet over. Instead of taking a final stance on the matter, we want to refer to a very interesting interview with William Porter, Head of European Credit Strategy at Credit Suisse; he argues that "the crisis is not observable at all. But that does not mean it's gone away. It's gone underground" (Porter 2013).

2 In an interview with the Financial Times, Charles Prince, then CEO of Citigroup, described how "[w]hen the music stops in terms of liquidity, things will be complicated. But as long as the music is playing, we have got to get up and dance. We are still dancing" (Prince as quoted in Nakamoto and Wighton 2007). In his interview with the FCIC, Prince complains that his statement, and a similar statement he made at a dinner with Treasury Secretary Henry Paulson, are quoted quite often, but mostly taken out of the context: Prince was referring to the banks' lending business, more specifically the loans made to private equity firms. As he emphasizes, the quote has "had nothing to do with the mortgage business, it had nothing to do with what turned out to be CDOs. That was not part of my thinking or on the radar screen at all" (Prince 2010, 123).

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the latter and much smaller group did not include many, if any, regulators.[3] In hindsight, the ignorance of public officials towards the mechanisms and channels through which the crisis would propagate during 2007 and 2008 is difficult to believe. In March 2007, Federal Reserve President Ben Bernanke testified before Congress that "the impact on the broader economy and financial markets of the problems in the subprime market seems likely to be contained" (Bernanke 2007b), and Treasury Secretary Henry Paulson made a similar statement (Faber 2010). It however turned out that the problems in the subprime markets were not contained. It appears that during the crisis months, government officials were essentially flying blind (Mendelowitz and Liechty 2010, 3). Hence, the crisis not only shed new light on a decade of deregulation and financial innovation, it also revealed that *policymakers and regulators were facing severe gaps with regard to financial market data, information, and knowledge* (see for example Black 2012; Financial Stability Board and International Monetary Fund 2009; Flood et al. 2010).

German sociologist Wolfgang Streeck has asked what social scientists can contribute to enhance our understanding of this "economic and political crisis of global dimensions" (Streeck 2011, 1). The financial crisis of 2007ff. represents the starting point for this book, but we do not want to add yet another analysis of the complex interplay between financial institutions, rating agencies, mortgage originators and regulators that finally mounted in the financial crisis. Our contribution focuses on a phenomenon that could be observed before and throughout the crisis, that has received little scholarly attention so far and that remains undertheorized to this date: Against the background of increased financial system complexity, we examine the *role and nature of data-, information-, and knowledge-related problems in financial supervision and regulation.*[4] As we show, certain

3 There are of course exceptions – the people who issued warnings were just not influential or convincing enough. As we will see throughout this book, former chairperson of the CFTC Brooksley Born provides an example here.

4 When we speak of financial regulation, we mean "the set of rules and standards that govern financial institutions" which aims at providing financial stability and protecting customers and takes "different forms, ranging from information requirements to strict measures such as capital requirements" (High Level Group on Financial Supervision in the EU 2009, 13). In line with the group chaired by Jacques de Larosière, we distinguish regulation from financial supervision, which covers "the process designed to oversee financial institutions in order to ensure that rules and standards are properly applied" (ibid.). We also agree with the de Larosière Report that regulation and supervision are not only closely intertwined, but also interdependent: Regulation cannot work if supervision is not effective and vice versa. Many of the US federal agencies have regulatory *and* supervisory responsibilities: The CFTC, which is responsible for the US commodity futures and option markets, had finalized 43 of the rules it was required to write by Dodd-Frank as of November 2013 (Davis Polk & Wardwell LLP 2013). But the CFTC is not only involved in rulemaking; it also oversees the futures markets, looking for abusive trading practices and fraud. Besides the CFTC, independent federal agencies relevant to our work are the Board of Governors of the Federal Reserve System, the Securities and Exchange Commission (SEC) and the Consumer Financial Protection Bureau (CFPB). Just like the CFTC and the Fed as well, they have important regulatory and supervisory mandates.

aspects of these problems have been known and discussed in academia for decades. The establishment of the Office of Financial Research (OFR) in Washington in 2010 in response to the crisis does nevertheless present a turning point. With the Dodd-Frank Act (DFA)[5], the US government not only acknowledged the existence of such problems, but also set out to solve them. Among the various US policy responses to the crisis, the OFR is therefore the most important one for the analysis at hand.[6]

The crisis triggered financial reform on both sides of the Atlantic. However, while stress tests and living wills, new resolution mechanisms and systemic risk oversight councils have been introduced in the US and elsewhere, the OFR presents a unique policy response to the crisis. Differences in reform reflect the fact that, while the financial crisis was an epidemic event of global reach, it started as a mortgage crisis in the United States, evolved into a sovereign debt crisis in the European Union and lingers on as a social and political crisis in the most severely affected national economies, such as Greece and Spain. The global crisis revealed that regulators had put too much emphasis on microprudential regulation and bank-internal risk models, that financial institutions were overleveraged and that their risk management was not effective. But the US crisis was also perceived as *a crisis of inadequate data and information and more importantly, of missing expertise*. We therefore focus our analysis on the US crisis, but refer to the European case wherever a comparative perspective proves to be helpful. Comparing Europe and the United States, the second distinctive feature of the US debate is a lively discussion about *legislative and executive capture as a cause for the crisis*. As we will see, information and knowledge deficiencies and the capture diagnosis are closely intertwined.

"Politics presents itself as a *system of societal control*", and according to Luhmann, it tends to "action rather than inaction" (Luhmann 2008, 173, emphasis added). When the crisis erupted, the US government responded case-by-case, and it appeared for some time as if Treasury had lost oversight and control of the financial system – up to the point when US Secretary of the Treasury Hank Paulson demanded a *bazooka* (The Economist 2008) to fight back the crisis and asked Congress to support the 700 billion US dollar Troubled Asset Relief Program

5 The complete title is Dodd-Frank Wall Street Reform and Consumer Act (111th Congress, Public Law 111-203, H.R. 4173.).

6 When we write about the US policy responses to the crisis, we refer to the Dodd-Frank Wall Street Reform and Consumer Protection Act (referred to as Dodd-Frank or DFA throughout this book) that was signed into law by President Obama in July 2010, but also to the bodies and measures established by Dodd-Frank: The Financial Stability Oversight Council (FSOC), the Office of Financial Research (OFR) and the Consumer Financial Protection Bureau (CFPB), to new requirements such as the Fed stress tests and living wills, but also to new authorities, such as the FDIC's Orderly Liquidation Authority (OLA).

(TARP).[7] R*egulation by deal* (Davidoff and Zaring 2009) was followed by system-wide short term policy responses, until Congress finally agreed on the Dodd-Frank Act, the most far-reaching regulatory overhaul in US financial regulation since the Great Depression (Obama 2009). Whether it constitutes *symbolic politics* (Edelman 1970) or substantial policy change is a question that will follow us throughout this book.

When looking at the US policy responses to the crisis, we have to be aware of the fact that some of the underlying causes and mechanisms of the crisis can eventually be resolved, while others cannot be overcome and will therefore persist. The majority of *structural issues*, for instance the remuneration practices for top executives, the quality of residential mortgage loans (originate-to-sell model) and the business model of rating agencies (issuer-pays model), either have been or could be altered by regulators. The same applies to many *regulatory issues*, such as pro-cyclical capital regulation. Yet, the *systemic features* of today's global and complex financial system remain: The interconnectedness of financial institutions via derivatives contracts; the complexity of certain large and global institutions, consisting of more than thousand legal subsidiaries each; the emergent properties resulting from a large number of autonomous, non-linear actors; the reciprocal behavior of its members; the interdependency of the interbank market and the real economy, to name just a few.[8] The nation states' ability to govern the financial system is therefore necessarily limited.

The financial system evolves at a pace that constantly increases regulators' non-knowledge of the financial system. As we will see, the question whether regulators have learned that lesson is crucial. The (over)confidence of the central actors – including policymakers, regulators and financial institutions alike –that *this time was*

7 According to Abolafia, "[a]mong the first framing moves in a crisis setting is an effort to define the degree of disruption". In case of the US financial crisis, Henry Paulson – who was convinced of the severity of the crisis – became what Abolafia terms a *reframer*: "Reframers advocating changed practices must be able to convince their constituency that the shock requires strong action" (Abolafia 2005, 212).

8 Following Dodd-Frank, the term *financial institutions* covers bank-holding companies (BHCs), financial market utilities (FMUs) and nonbank financial companies (NBFCs). BHCs are, according to the Bank Holding Company Act of 1956 (Public Law 85-511, 85th Congress, H.R. 6227), companies which directly or indirectly own or hold a minimum of 25 percent of two or more banks, but do not necessarily engage in banking themselves (see Sec. 2 of the Bank Holding Company Act for a more detailed definition). JPMorgan Chase & Co (JPMorgan), The Goldman Sachs Group, Inc. (Goldman), and Deutsche Bank AG (Deutsche Bank) fell under this definition as of November 2013 (Board of Governors of the Federal Reserve System 2013c). Financial market utilities are defined as systems or entities "for transferring, clearing, and settling payments, securities, and other financial transactions among financial institutions or between financial institutions and the system" (Board of Governors of the Federal Reserve System 2013b). Examples for FMUs are the Chicago Mercantile Exchange, Inc. or the National Securities Clearing Corporation. NBFCs provide banking services, but do not hold banking licenses; they are accordingly not allowed to take deposits. In 2013, two NBFCs were designated as systemically important by the FSOC: The insurance company American International Group, Inc. (AIG) and the financial services and leasing company General Electric Capital Corporation, Inc. (GECC).

different (Reinhart and Rogoff 2009), that they had outsmarted the market, and that they were able to control the system was certainly the most dangerous fallacy of the pre-crisis years (Willke and Willke 2012). The US government finds itself in the paradox situation that it must address the existing data, information and knowledge gaps, while it will ultimately be unable to close them. The resulting uncertainty might prove to be the biggest challenge to policymakers and regulators. It requires regulators to not only enhance their data and information collection abilities, but also to introduce "mechanisms for cognitive challenge" (Black 2012, 41) that enhance their learning capacities.

1.1 Eliminating Hobson's Choice, Or: A Binary Model of Systemic Risk

In 2008, the collapse of a number of systemically important financial institutions (SIFIs) – first The Bear Stearns Companies, Inc., then Lehman Brothers Holdings Inc. and then, among others, American International Group, Inc. (AIG), Federal National Mortgage Association (FNMA, commonly known as Fannie Mae) and Federal Home Loan Mortgage Corporation (FHLMC, known as Freddie Mac) – each confronted the US government with the *Hobson's choice* to either bail the SIFI out or let it go into disorderly bankruptcy at the risk that its failure triggers a systemic financial crisis (Tarullo 2010a; see also Wilmarth 2013, 1320; Goldstein and Véron 2011). The reference to Hobson implies that what looked like a binary choice at first sight turned out to be, at the latest after the Lehman bankruptcy, not really any choice at all: The US and European governments felt that in order to save the economy there was no alternative to rescuing their respective SIFIs, and so they did: The US government not only supported its failing financial institutions directly through bailouts, but also engaged in extensive deal-making to stabilize the system through mergers and acquisitions (see Blankfein 2010; Davidoff and Zaring 2009).[9] Against this background, we developed a simple binary model of systemic risk (see figure 1) that illustrates the *too big to fail* (TBTF) phenomenon from a governmental perspective. In theory, governments confronted with the failure of a financial institution have the choice to either bail it out or not bail it out. When an institution is bailed out (B), there are two basic options: The rescued institution was a SIFI (B.2), or it was not a SIFI (B.1). The interesting point is that once the institution is saved, we cannot find out what was the case. The failure of an

9 *Systemically important financial institutions* (SIFIs, or G-SIFIs for global SIFIs) are companies that are believed to trigger financial crises when they collapse, either because of their size or their interconnectedness or other factors that we will discuss in detail in chapter two. When SIFIs are perceived by the market as being systemically important, they are labeled as being *too big to fail* (TBTF); since 2010, Dodd-Frank requires the FSOC to officially designate the respective institutions as TBTF, thereby explicitly attributing systemic importance to certain market participants.

institution (A) again implies two possible futures: That the institution was a SIFI and its collapse triggers a systemic crisis (A.2); or that it was not a SIFI and its collapse does not trigger a systemic crisis (A.1).

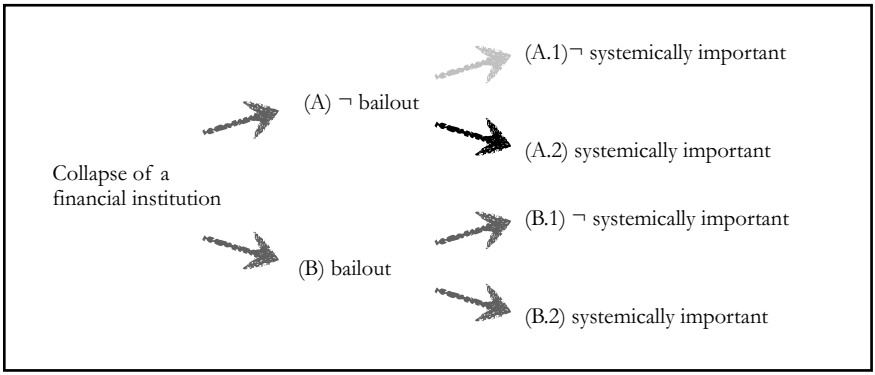

Figure 1: Binary model of systemic risk.

As the colored arrows indicate, each option comes at a different price: A.1 neither imposes costs on taxpayers (meaning *financial costs*), nor on governments (*political costs*), nor on other financial institutions and shareholders (*financial costs*). A.2 represents the Lehman case: For reasons to be discussed in greater detail in chapter three, the US government decided not to rescue the investment bank – a decision that was costly as it not only required governments to rescue the global financial system, but also resulted in a steep recession in the US and Europe. The political costs of the crisis, as well as their long-term impact on democratic governance, remain to be seen. A.2 puts the costs of a bailout (B) into perspective: They are high, but significantly lower than the costs of a full-fledged financial crisis. Interestingly, the costs for taxpayers and governments remain the same in both bailout cases, independent of the systemic relevance of the institution at hand. As we saw during the financial crisis of 2007ff., other financial institutions usually gain from a bailout.[10] The financial crisis reminded policymakers and market participants alike that the failure of a too big to fail institution is by far the worst option among the given four. Therein, it reinforced the implicit government subsidy for SIFIs – a phenomenon that will be discussed at-length in chapter three. Even though the

10 Other financial institutions gain from bailouts both directly and indirectly: When AIG was rescued by the US government, Goldman Sachs alone received more than 14 billion dollar from the rescue fund, based on outstanding contracts with the insurance company (Financial Crisis Inquiry Commission 2011, 377). As other financial institutions and the overall economy, it also benefited from an increased financial stability. Several institutions did also profit from government-backed mergers.

commitments made by the US government during the crisis were much higher than the actual payments, the fiscal costs of the crisis were immense.[11] The price for the Lehman Brothers collapse – including not only the bankruptcy fees that will exceed two billion US dollars (O'Toole 2013), but also the costs of the events directly triggered by the bank's failure – remains an issue of debate.

Looking at the key events throughout 2008, the pivotal question is whether the US government, when Bear Stearns and Lehman, AIG, Fannie Mae and Freddie Mac were effectively insolvent, really had the *choice to intervene or not to intervene* (Luhmann 2008, 173). The crisis showed that, confronted with a failing SIFI, governments are literally being taken hostage by their financial institutions. Have the US government and the Fed become *prisoners of the markets* (Yellen 2013b)? While the receiving side – the SIFI – is characterized by its global structure and reach, the giving side – the government and its central bank – is characterized by its national structure and reach, constraining the policy options of the nation states: Due to the size, interconnectedness and complexity of the institutions at stake, their scope of action is obviously limited. Some of the problems experienced throughout 2008 were of a structural nature: How could a national agency like the FDIC wind down a global institution like Lehman Brothers without a viable cross-border resolution authority or the respective agreements with other nation states? Other factors followed a political logic, and they are often overseen. Two central and exemplary questions for the team around Treasury secretary Paulson were how the public and the media would react to bank bailouts by a republican government and whether the government had the support of Congress for its rescue program TARP.[12]

The question whether governments have become prisoners of their markets persisted well throughout the reform period after 2008: Policymakers in the EU and the US expressed their concerns that tougher financial regulation could hamper the economic recovery. Interestingly, these concerns are all but new: A century ago, Wilson described how the US government had become the *foster-child* of special interests, as it was warned "at every move: 'don't do that; you will interfere with our

11 The costs of the financial crisis in the US are not (yet) agreed upon. A recent Federal Reserve Bank of Dallas research paper asked how much worse society is off compared to an estimation of the normal developments absent a crisis. It estimated an output loss of six to 14 trillion US dollar (Luttrell, Atkinson and Rosenblum 2013). The direct costs of the bailouts are yet another issue. As long as the money lent is not fully returned, and the US government owns bonds of the companies it rescued – the FDIC sold its last Citigroup bonds in September 2013, at a total profit of more than 13 billion US dollar (Henry 2013) – the total bailout costs will remain in the dark.

12 In his interview with the FCIC, former Treasury employee Neel Kashkari describes how the team around Henry Paulson held back its so called *break the glass plan*, the emergency action plan that would later become TARP, until it could be very certain that Congress would accept it. According to Kashkari, Treasury feared that if it would not pass, the plan itself might, in a self-fulfilling matter, reinforce the crisis it was designed to mitigate (Kashkari 2010).

prosperity'" (Wilson 1913). It appears that systemically important financial institutions have authority over nation states in two ways: Firstly, they pose a systemic threat to the financial system when failing. Secondly, the financial sectors of many western economies have become too important in terms of GDP and growth to get into their way with extensive regulation.[13] Lindblom has illustrated this point more generally when describing the dilemma nation states are facing: "Either the demands are met, or the corporation goes elsewhere" (Lindblom 1977, 180).

This book begins with a decision – the remarkable decision of the US Congress to establish an Office of Financial Research in order to address the data and information gaps experienced during the crisis. Starting from there, we describe and define data-, information-, and knowledge-related problems in US financial regulation. We show that the US government addresses these types of issues to different degrees, but largely underestimates the risks resulting from unknown unknowns. The term *waterbed effect* describes the phenomenon that when regulators cap prices, charges or payments in certain areas or market segments, an overall re-balancing of prices, charges or payments occurs in the market and ultimately leads to a price, charge or payment increase in another area or segment. Remuneration practices provide a good example here: A cap on fixed income leads to an increase in bank bonuses, and bank bonus caps induce increases in fixed income. A similar waterbed effect can be observed in financial regulation: When policymakers and regulators focus on one problem – e.g. to conduct micro-prudential oversight (pre-crisis), or to close data gaps (post-crisis) – they lose sight of other problems – in this case, to tackle macroprudential problems, or problems of knowledge that are difficult to overcome.

Going back to the model, the situation of the US government has changed since the crisis, at least on paper. Our simple binary model of systemic risk illustrates the policy options of the US government back in 2008, but it does not account for the changes induced by the Dodd-Frank Act in 2010. Once fully implemented, Dodd-Frank has the potential to alter the situation and the model accordingly. As we will discuss in greater detail in chapter four, the DFA limits the Fed's ability to act as a lender of last resort and provide direct support to single financial institutions. As a complementary measure, Dodd-Frank strengthens the FDIC's ability to resolve global, complex financial institutions. A future decision not to bail out a SIFI

13 The ratio of total financial sector assets to GDP has grown massively. In the UK, the ratio of deposit money banks' assets to GDP in percent has increased from 110 percent in 1991 to 192 percent in 2011, in Spain from 102 percent in 1991 to 232 percent in 2011. The increase was much more moderate in others countries, e.g. in Switzerland (163 to 181) and the US (61 to 62). However, we have to take a closer look at the growth of assets in other parts of the financial sector, e.g. at nonbank financial sector assets. Here, the ratio of assets to GDP has grown from 89 percent in 1991 to 297 in 2011 in the US (all data rounded and taken from the Worldbank's World Data Bank as of February 17, 2014, available on http://databank.worldbank.org/data/).

should, under the Orderly Liquidation Authority (OLA) of the FDIC, not result in a disorderly bankruptcy that triggers a financial crisis. While the OLA should improve the *crisis management of the US government*, other provisions tend to *prevent SIFIs from collapsing in the first place*: The Financial Stability Oversight Council (FSOC) designates systemically important institutions, leading to increased supervision by the Federal Reserve Bank. Higher prudential requirements and central clearing, stress tests and living wills should reduce the possibility of failure, too. The OFR, with a staff of 200 to 300, aims at collecting and aggregating data and gathers financial market information; besides, it ought to build up own financial expertise. As a result, government officials should – to use an expression coined by Mendelowitz and Liechty – never again be flying blind throughout a crisis (Mendelowitz and Liechty 2010, 3). Two aspects are important in this respect. First, the fact that the financial crisis was perceived as a *crisis of financial market data and information in the US* (Flood et al. 2010), much more than this was the case in the European Union. Second, and closely related, the EU financial crisis soon evolved into a full-fledged crisis of sovereign debt, redirecting the focus of reform to the nation states and their respective crises, as well as at the regulatory and supervisory architecture of the European Union. We will look at both reform agendas more closely in chapter four, and see how they differ and overlap.

Looking at the financial crisis as a crisis of data, information and knowledge redirects the analytical focus from mortgage lending and leverage, from macro-economic imbalances and flawed incentive schemes, to the complexity of financial products, financial institutions and the system as such. It enables us to ask whether regulators actually understood the system they supervised and policed and if the set of struggling SIFIs had in fact become not only too big to fail, but also *too complex to manage*. To what degree did data, information and knowledge asymmetries between regulators on the one hand and regulatees on the other play a role in the recent financial crisis?[14] Were regulators constrained by their *bounded rationality* (Simon 1955), or were they, as one of our interview partners put it, "just chicken" and dared not to have a closer look at certain business practices? Whenever policymakers increased the transparency of a business or market, certain operations and trades apparently moved into some other, darker corner of the market, while at the same time, regulators failed to address the resulting unknowns.[15] While some argue that US regulators only need better data and information to regain control over the financial sector – a position that we term the *sufficiency argument*

14 The term *regulatee* refers to the supervised or regulated entity – meaning the financial institution affected by a rule or regulation.

15 In his interview with the FCIC, Gary Cohn from Goldman Sachs describes the mechanism by which dark markets evolve wherever transparency is increased. He adds that while transparent markets are officially regulated by the government, nontransparent markets such as the OTC market are regulated by the markets themselves (Cohn 2010).

throughout this book – others warn that building up the respective expertise is even more demanding, if not impossible. Yet, our analysis in chapter two of the systems characteristics of the 21st century financial system indicates that ultimately, systemic crises are *natural accidents* (Perrow 1981) and can accordingly not be prevented.

1.2 The Argument in Brief

Former US Secretary of Defense Donald Rumsfeld is well known for his unique speaking style. Referring to the potential existence of weapons of mass destruction in Iraq in 2002, Rumsfeld famously said:

> Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones. (Rumsfeld 2002)

There obviously is a certain humor and, as we now know, irony to this quote. However, the basic distinction that Rumsfeld draws between the differing phenomena of *known knowns*, *known unknowns* and *unknown unknowns* is correct and very well applicable to the situation faced by financial regulators: The things these regulators did not know – including the degree of interconnectedness and complexity of the financial system, as well as the risks posed by 21st century systemic risk – did in fact turn out to be the difficult ones. Rumsfeld's statement is the first of several quotes that we want to cite to explain our argument in brief. The second quote goes back to Brooksley Born, who was the head of the US Commodity Futures Trading Commission (CFTC) between 1996 and 1999. In 1998, Born attempted to examine and eventually regulate derivatives in the over-the-counter-market (OTC) market – a group of financial products that would later be called "financial weapons of mass destruction" by Buffett (2002, 6; see also Buffett 2010, for the extended argument) and that certainly was a centerpiece of the financial crisis. Born later explained that:

> I had had enormous concerns about the over-the-counter derivatives market, including credit default swaps, for a number of years. The market was totally opaque; we now call it the dark market. *So nobody really knew what was going on in the market.* (Born 2009)

Her efforts to examine what has been well termed *the other* and the *strange land* (Tett 2010) were strongly opposed not only by the financial industry, but also by other federal financial regulators and by Congress. In 2000, Congress passed the Commodity Futures Modernization Act (CFMA) to once and for all restrain the CFTC from regulating OTC derivatives. As a result, regulators' non-knowledge of what is now called the *shadow banking system* persisted and grew further. Born is a central figure in the narrative of the financial crisis: She saw the risks arising from unknown unknowns; in addition, she was one of the few regulators who actually identified them and, by addressing them, turned them into known unknowns. The case of Brooksley Born also shows that in the decades leading up to the financial crisis, regulators such as the CFTC did not have access to the relevant data and information to examine what was going on in certain fast evolving, highly innovative sectors of the financial market. Looking back, the former chief executive and chairman of Citigroup Sandy Weill asks whether regulators could have done better – admitting that he thinks "the answer is yes. But I think they were terribly handicapped by a lack of information. And by the direction that people wanted to go at that point in time" (Weill 2010).

Unfortunately, the problem was not limited to financial data and information, it also related to regulators' general knowledge and ability to understand the market. Former Fed president Alan Greenspan, who had always been an advocate of unregulated derivatives markets, provides us with a third central statement. After the risks had materialized, he admitted:

> I've got some fairly heavy background in mathematics […]. But some of the complexities of some of the instruments that were going into CDOs bewilders me. […] And I figured out that if I didn't understand it and I had access to a couple hundred PhDs, how the rest of the world is going to understand it sort of bewildered me. (Greenspan as quoted in Sorkin 2010, 90)

As these quotes show, the US financial crisis has not only been a crisis of bank liquidity and capital, of derivatives and mark-to-market accounting, of evaporating trust and herd behavior, but it has also been a crisis of *financial market data, information and knowledge*.[16] The crisis revealed that basic data and information, e.g. concerning the counterparties or subsidiaries of a financial institution, were either not available or not accessible for financial regulators. Besides, both regulators and policymakers do apparently "face a structural, widening epistemic gap between what they are able to know and what they need to know" (Weber

16 Unfortunately, neither experts nor policymakers do usually differentiate between problems related to inadequate data, information and knowledge. As we argue and explain over the course of this book, distinguishing between these three phenomena is not only important, but also a prerequisite to addressing them.

2012, 644f.). As Arthur Levitt, former chairman of the SEC, describes in his FCIC interview:

> There is regulatory capture without any question. [...] I think the 4000 people that worked for me were really patriots. These guys were all overworked and underpaid and terribly, terribly loyal. Yet, they lacked the skills to compete with the array of power represented by the business community, and their lobbyists and their lawyers and their staffs. That really reached a crescendo after the development of electronic markets that my Commission was responsible for [...]. Getting there and trying to arbitrate the battles between the various exchanges, and dealing with technologies, that in particular created the greatest void in terms of our ability to regulate an industry which was light years ahead of us in terms of technology. And I think that really went on in an accelerated pace after I left. (Levitt 2010)

The complexity of the financial market on the one hand and the limited processing capabilities of policymakers and regulators on the other result not only in a growing knowledge asymmetry between regulators and regulatees, but also in an *increased importance of private expertise in financial regulation*. Private sector lobby groups, "men who know so much about the matters they are talking of that you cannot put your knowledge into competition with theirs" (Wilson 1913, ch. VII) convince and overwhelm policymakers and regulators with technical details. While this development has been observed for decades and in different policy fields, the particular characteristic of the financial sector is a lack of private, non-profit expertise. The problem loomed large during the financial crisis and became explicit when Members of the European Parliament published their Call for a Finance Watch:

> the asymmetry between the power of this lobbying activity and the lack of counter-expertise poses a danger to democracy […]. As European elected officials in charge of financial and banking regulations, we therefore call on civil society […] *to organize to create one (or more) non-governmental organization(s) capable of developing a counter-expertise on activities carried out on financial markets* by the major operators […] and to convey effectively this analysis to the media. As elected officials from different political families we may differ on the measures to be taken. But we are all together in wanting to create greater awareness in the public opinion on this risk for the quality of democracy. (Finance Watch 2010, emphasis added)

To address data, information and knowledge asymmetries between financial regulators and regulatees, the US government established the Office of Financial Research. While the post-crisis reform efforts in the US and the EU do partly overlap, the OFR presents a unique policy response to the crisis, based on the

assumption that the crisis demonstrated "the inadequacies of the information infrastructure supporting the US financial system" (Flood et al. 2010, 1).

The financial crisis did not only lead to the creation of new regulatory bodies, it also triggered a lively debate in the US concerning the degree of *capture of policymakers and regulators by the financial industry*. As we argue towards the end of this book, a closer look on data, information and knowledge asymmetries in financial regulation sheds new light on the phenomenon: Research that is discussed in chapters five and six indicates that neo-liberal policies and (de)regulations were not so much pursued to deliberately serve industry interests, but rather because policymakers and regulators, defeated by financial market complexity, faced severe difficulties in formulating and advocating the public interest when it came to financial governance. The financial crisis of 2007ff. invites us to rethink *the agency relationship between policymakers and regulators on the one hand, and regulatees on the other*. Drawing on Capture Theory as proposed by George Stigler (Stigler 1971) and his fellow Chicago economists, as well as on recent capture research that was triggered by the US financial crisis (Kwak 2013; Weber 2012; Barkow 2013), and based on numerous interviews with industry and policymaking experts, we offer the *knowledge capture* concept as a new theoretical framework for financial regulation under conditions of 21st century complexity.

1.3 Literature Overview and Current State of Research

Providing an up-to-date overview of research related to this book is a challenging task for two reasons: First, while central issues – especially TBTF, systemic risk and macroprudential oversight – have been a subject of debate for several decades now, the financial crisis has led to a renewed and continuing academic interest in these topics. The number of potentially relevant publications is accordingly vast, and what is worse, it is constantly growing. Second, the situation is changing constantly. The moment we finished our analysis, new publications and reports came out and provided potentially important information. Especially the new US institutions remain work in progress, while Dodd-Frank implementation is far from being completed. Third, we build our argument on contributions from the disciplines of economics, political science, law and sociology. We are well aware that, as in every interdisciplinary research project, we risk falling short on each of them. Yet, to develop an adequate theoretical framework for the study of data-, information- and knowledge-related problems in financial regulation, we had to draw on contributions from different disciplines. Unfortunately, the general problem with overviews is that they tend to be more important the more difficult they are to provide. This section therefore presents a short introduction into the current state of research related to this book. Because of space constraints, we only briefly

discuss the most important contributions and recommend the respective chapters for further information.

In hindsight, factors contributing to the crisis can be distinguished into *regulatory causes*, such as the housing policy of the US government, and *private sector dynamics*, such as the growing demand for OTC derivatives. Unfortunately, only few academics look at a third category of contributing factors, the *specific system characteristics* that differentiate the systemic crisis of 2007ff. from other financial crises (see Willke, Becker, and Rostásy 2013, and ch. two of this book). In this context, network analysis (see for example Vitali, Glattfelder, and Battiston 2011) and agent-based modeling (see for example Thurner 2011) are promising and growing fields of research.[17] Systemic risk research was, at least until the recent financial crisis, mostly confined to the finance and economics disciplines (see for example Davis 1995; De Bandt and Hartmann 2000; Kaufman 1996; Bisias et al. 2012, provide an overview of current research on systemic risk measures). The deregulation paradigm of the 1980s and 1990s, which was based on a strong belief in free markets and self-regulation, has prevented governance scholars and policymakers alike from examining systemic risk. The situation has changed fundamentally since 2008: Contributions by law scholars have enhanced our understanding of systemic risk and the financial crisis (see for example Levitin 2011; Anabtawi and Schwarcz 2011; Schwarcz 2008; Wilmarth 2002). We can also find a growing number of interesting publications in political science and sociology (see for example McCarty, Poole, and Rosenthal 2013; Mosley and Singer 2009, for an overview over current research questions in the field of International Political Economy; Lounsbury and Hirsch 2010).[18] In chapter two, to provide a systems theory perspective on systemic risk, we mainly draw on publications by Helbing (2010), Palmer and Maher (2010) and Willke et al. (2013). Important and closely related is the issue of financial system complexity. In chapter three, we differentiate between three levels of complexity: The complexity of financial products (*micro-level complexity*), the complexity of too big to fail, or too complex to manage financial institutions (*meso-level complexity*), and the systems level (*macro-level complexity*) (Haldane and Madouros 2012; Stiglitz 2009b; Gai, Haldane, and Kapadia 2011; Haldane 2010; Hu 2012; Weber 2012; Gai 2013; Gai and Kapadia 2010). As we show, recent research indicates that complexity has increased on all three levels. Both the US and the EU financial reforms discussed in chapter four are not yet fully implemented. To assess these moving targets, we go back to the initial

17 Taleb doubts that agent-based models "work outside of research papers" (Taleb 2012b, 2).

18 We do not want to imply that the sociology discipline has not contributed to financial market literature in the past – the opposite is the case. Examining the social embeddedness of financial markets, sociologists have elaborated the role and behavior of the individuals that *make markets* (see for example Abolafia 1996; Knorr-Cetina and Preda 2005, therein especially MacKenzie 2005 and Fenton-O'Creevy et al. 2005).

government documents (including laws, reports, press releases, and speeches) and the accompanying media coverage. We make a few exceptions, however: Sorkin, based on interviews with government and market insiders, provides a detailed account of the crisis events and the respective governmental decisions (Sorkin 2010).[19] Davidoff and Zaring provide a detailed legal analysis of the government bailouts in 2008 (Davidoff and Zaring 2009). Wallach discusses the US policy responses against the background of the rule of law (Wallach 2010). And Acharya et al., in their book on Dodd-Frank, provide one of the early analyses of the regulatory overhaul in the US (Acharya, Cooley, et al. 2010b; see also Acharya et al. 2011). The situation in the EU is somehow different: While Dodd-Frank has been signed into law in 2010 and is gradually being implemented ever since, the European crisis has triggered an ongoing debate about the EU regulatory and supervisory structure and a future European Banking Union, a fact that is reflected in the numerous scientific contributions on the EU developments (see for example Pisani-Ferry and Sapir 2010; Fonteyne et al. 2010; Schoenmaker 2011; Ferran 2011; Ferran and Kern 2011). At the global level, the transformation of the Financial Stability Forum (FSF) to the Financial Stability Board (FSB) was also closely monitored by the academic community (Helleiner 2010a, 2010b; Griffith-Jones, Helleiner, and Woods 2010, especially: Momani 2010).

Turning towards the focus of this book, the role of data-, information- and knowledge-related problems in financial regulation has not received much scholarly attention so far. To begin with, "the literature often draws little distinction between information and knowledge. Expertise is treated as the obtainment of missing data" (McCarty 2013, 102). While financial policymakers and regulators describe insufficient data and missing expertise, they too do not often differentiate between problems related to data, as opposed to information, as opposed to knowledge. The distinction we draw in chapter five is mainly based on classic contributions by Zeleny (1987), Ackoff (1989) and Davenport and Prusak (1998), and aims to add definitional clarity to this rather vague set of problems.

To distinguish between the types of information asymmetries according to the actors involved, we employ and refine a four-category framework brought forward by Willke and Becker (2013). Interestingly, information and knowledge are corner stones of financial theory (Preda 2001, 16) – the respective literature on information and knowledge related problems is in fact vast (see Svetlova and van Elst 2012, for a current overview) – but financial theory focuses on asymmetries between market participants, and mostly leaves out regulator-regulatee relationships. As Preda complains, "information is mostly blackboxed, or seen as being mirrored by

19 The Financial Crisis Inquiry Commission referred to Sorkin's *Too Big to Fail (2010)* as well as to Lewis' *The Big Short (2011)* in numerous of its interviews (see for example Blankfein 2010; Das 2010). These contributions are not scientific analyses of the crisis, but they include many relevant insights and basic facts and accordingly provide a good starting point to assess the crisis.

securities' prices. A key task would be to open up this concept and push it to its ultimate consequences" (Preda 2001, 16). We draw on agency theory to grasp the relationship between regulators and regulatees, and the changes induced by increased information asymmetries (Mitnick 1984 and 1992; Moe 1984; Eisenhardt 1989; Shapiro 2005).

When we speak of knowledge, we refer to individual as well as organizational knowledge (see Castro et al. 2007, 48ff., for an overview of literature on both types). In our definition of knowledge we follow German sociologist Nico Stehr who understands knowledge as the *capacity to act*, or to *start something going* (Stehr 2007, 143; Ackoff 1989). Distinct from data and information, knowledge is closely tied to experience and practice (Becker and Willke 2013), and it is rooted in and confirmed by *communities of practice* (Willke 2002). It can be embodied in organizational rules and structures, but it requires human judgments and experiences to create knowledge. Boisot and Canals conclude that "there is no such thing as common knowledge and there is common information only to a limited extent. Only data can ever be completely common between agents" (Boisot and Canals 2004, 63).

In chapter six, we further develop our understanding of the role of information and knowledge asymmetries in financial regulation, based on Wagner's *Administrative Law, Filter Failure, and Information Capture* (Wagner 2010). Wagner draws on a number of studies dealing with information-related problems in environmental regulation to ultimately rework Stigler's Capture Theory (Stigler 1971). Even more central to this book is Weber's text on *Structural Regulation as Antidote to Complexity Capture* (Weber 2012). Looking at what regulators know and what they need to know to fulfill their mandates, Weber identifies "a structural, widening epistemic gap" that he traces back to increased financial system complexity (ibid., 644f.). Starting from there, he develops a new perspective of capture. Together with recent contributions from Etzioni (2009), Kwak (2013), McCarty (2013) and Barkow (2013), these two publications form a new and growing strand of capture research that takes into account current developments in political governance and regulation, particularly with regard to financial governance. To these concepts of cultural and cognitive, of information and complexity capture, this book adds a first investigation into *knowledge capture in 21st century financial regulation*. It aims to explain why industry interests could become increasingly dominant in financial regulation and how they contributed to the financial crisis.

1.4 Research Approach

In his Nobel lecture of 1974, Friedrich von Hayek warns that unlike "in the physical sciences, in economics and other disciplines that deal with essentially complex

phenomena, the aspects of the events to be accounted for about which we can get quantitative data are necessarily limited and may not include the important ones" (Hayek 1974). Studies examining the causes of the financial crisis are multifaceted and numerous. The fact that the crisis is primarily approached in numeric terms – from the size of the rescue programs, to the increase of unemployment rates, bank leverage ratios, and sovereign debt in relation to GDP – conveys the impression that comprehensive studies must put quantitative research center-stage. How else could we deal with numbers, except with numbers? And how else could regulators counter the industry's arguments, except with data? The mandate of the Office of Financial Research, with its focus on data and information, clearly underlines this point. Yet, the financial crisis of 2007ff. was also perceived as a crisis of financial data: It decreased the credibility of the sophisticated calculations and models that had supposedly increased the safety of the system. The complex interplay of derivatives contracts, mark-to-market accounting, collateral agreements and counterparty behavior was apparently too complex to be modeled adequately (Buffett 2010). Interesting in this regard is also MacKenzie's case study of the LTCM collapse. Based on interviews with key participants, he describes how the hedge fund's sophisticated arbitrage activities were based as much in quantitative as in cultural knowledge, in an "understanding of matters like who held which bonds and why" (MacKenzie 2005, 77; see also Fenton-O'Creevy et al. 2005; Abolafia 1996). We therefore argue that, while quantitative analyses of the crisis are as important as they are legitimate, they alone are not sufficient. As the explanatory power of quantitative research is clearly limited, what is needed – not as an alternative, but as a complement – is an interdisciplinary and qualitative discussion of the causes and effects of the crisis. Von Hayek's argument, made long before the current crisis, encouraged us to approach the crisis in qualitative terms.

As the following figure illustrates, our approach combines a comprehensive literature review with a content-based, structured analysis of interviews, speeches, congressional testimonies, press releases and presentations. In addition, we base our analysis on laws and regulations, as well as on accompanying media coverage (figure 2).[20]

20 Much of our resources – especially the interviews, but also some testimonies, media articles and speeches – were not numbered. Several direct quotes do therefore not include a page number.

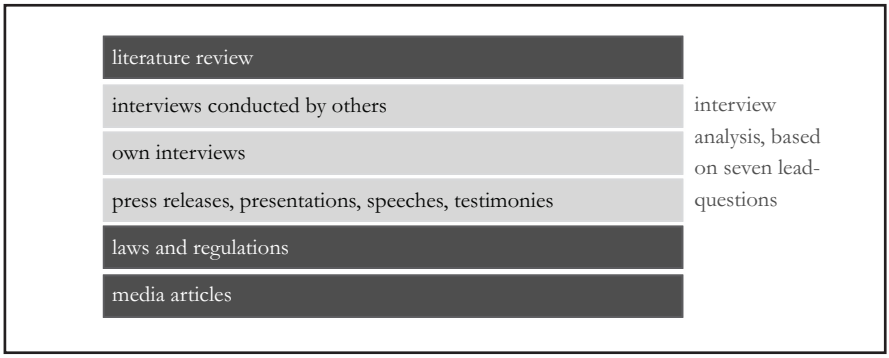

Figure 2: Research approach.

The existing interview material on the financial crisis is immense. We base our analysis on three types of interviews, adding up to more than 60 partly-transcribed interviews in total: The interviews conducted by the US Financial Crisis Inquiry Commission (FCIC), interviews undertaken by journalists, and last but not least our own interviews.[21] The FCIC alone has recorded more than 300 interviews with financial market experts that are now accessible via the FCIC's website.[22] Most FCIC interviews follow a similar logic, starting with a brief introduction of the commission's mandate, followed by an introduction by the interview partner, and then getting to the core question of what caused the financial crisis in the US and how the mortgage business and complex derivatives contributed to the crisis. In comparison, interviews conducted by journalists cover a much broader set of issues. This second set of interviews, available on the YouTube channels and web archives of broadcasting stations and government institutions, is, contrary to the FCIC interviews and our own interviews, non-standardized; yet it contains important information. The third group consists of a smaller number of interviews conducted by the author herself. In order to complement the publicly available material, these interviews explicitly examine data-, information- and knowledge-related problems in financial regulation. They are based upon a standardized field manual, and were fully recorded and transliterated whenever our interview partners agreed. To further increase our data-base, we included press releases, speeches, testimonies and

21 We conducted ten interviews between November 2012 and August 2013; unfortunately, we did not get the permission to record all of them, resulting in seven transcripts in total.

22 To sample the FCIC interviews, we took every third out of the 356 published interview files on the FCIC website. In addition, we selected the interviews that we expected to be relevant for our research, adding up to 163 FCIC interviews in total. Following our research questions, we partly transliterated 46 of these 163 recordings. They can be found in the appendix to this book.

presentations by central actors – policymakers, regulators and market insiders – into our research.[23]

The content-based interview analysis was structured by seven guiding research questions, not to be mistaken for hypotheses:

(1) Is systemic risk a rather economic or political phenomenon?
(2) Is financial governance exacerbated by an incongruence between nation states and global finance?
(3) Did data, information and knowledge asymmetries between regulators and regulatees contribute to the financial crisis?
(4) Do the US policy responses to the crisis represent a real policy change?
(5) Has the too big to fail phenomenon been resolved?
(6) Did the crisis happen due to regulatory capture?
(7) Has the financial system become too complex to regulate?

The research questions were not treated as hypotheses for good reasons. Based on a critical rationalist viewpoint, we do not believe that we are able to verify these phenomena (Popper 1994). At the same time, we agree with Hayek that, when investigating complex phenomena, Popper's approach has its limitations (Hayek 2007 [1967]). Going through the interviews and documents, we tried to find counterevidence as well as evidence, both contributing to the theoretical framework developed over the course of this book. During our research, we kept in mind that interview partners who did not mention data-, information-, or knowledge-related problems, might be counted as counterevidence, too. When confronted with an open question about the causes for the crisis, only very few experts did in fact name inadequate data and expertise. Therefore, despite the large number of interviews and other documents contributing to this book, our conclusion rests more on theoretical plausibility and deduction than on empirical data.

In addition to the material that found its way into the content-based analysis, we also base our understanding of the financial crisis of 2007ff. on a number of governmental reports: There are the reports and studies published by EU (Gerlach 2009; European Systemic Risk Board 2012, 2013a; European Central Bank 2010; High Level Group on Financial Supervision in the EU 2009), UK (Financial Services Authority 2009) and US institutions (Financial Stability Oversight Council 2011a, 2012a; Office of Financial Research 2012a; Financial Crisis Inquiry

23 We decided not to include media articles in our content analysis, yet they provided important information on government actions – such as the Flash Crash of 2010 and the SEC's attempts to investigate it – and therefore allowed us to construct several smaller case studies during the research process (Walton 1992). These in turn helped us to develop and corroborate our understanding of the phenomena at hand. Here, we mainly relied on articles from the New York Times, from the Washington Post, The Economist, and the Financial Times.

Commission 2011). In addition, the series of Global Financial Stability Reports by the IMF (2009, 2008), the reports published by the Group of Thirty (Group of Thirty 1997, 2009; Clark and Large 2011), and a set of international reports (International Monetary Fund, Bank for International Settlements, and Financial Stability Board 2009; Financial Stability Board 2011b) are of central importance. Among the contributions by governmental organizations, a joint report by the FSB and the IMF hints at the fact that information gaps did play a role in the crisis (Financial Stability Board and International Monetary Fund 2009).

As our field of research is wide, we also want to say a few words on what this book is not. First, the global financial crisis sets the stage for this study. It not only revealed a number of problems in financial governance, it also triggered policy responses from nation states and transnational governmental organizations alike. Yet, our focus lies on the US policy responses to the crisis (see figure 3). While we refer to the EU and to global financial reform for the benefits of comparative analysis in two subsections, our analysis of the transnational (EU) and international (Basel Committee and FSB) reform agendas is bound to be limited. These days, European financial reform in particular is a fast moving target, and we gladly leave it to others to reconstruct and analyze the reform process. Second, Dodd-Frank exceeds 900 pages. It requires countless regulations and interpretations from the US financial agencies. Again, we had to restrict ourselves – this time to the parts of the reform that, in a broader sense, relate to the focus of this book: Data-, information- and knowledge-related problems in financial regulation. Again, we touch upon other aspects of reform, but the picture we provide must be incomplete.

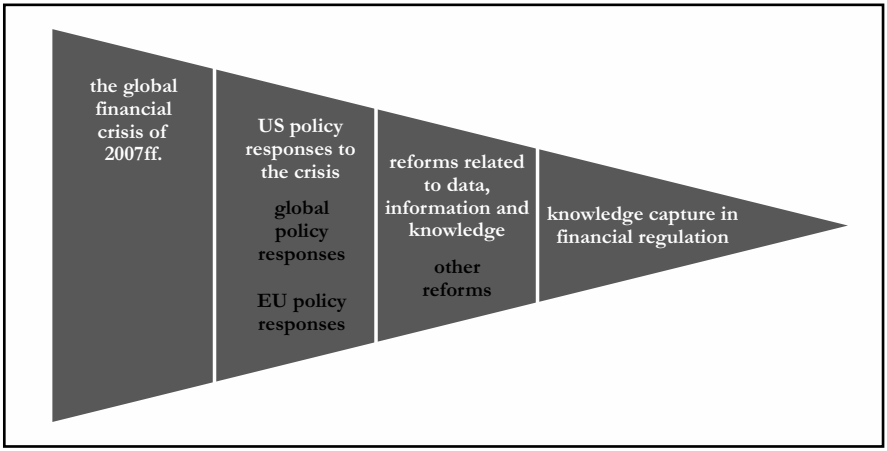

Figure 3: Focus and context of this book.

Based on our analysis of the crisis and the US policy responses, we develop a theoretical framework for the analysis of data-, information- and knowledge-related problems that we term *knowledge capture*. As the figure indicates, it is not applicable to financial governance per se. In our analysis, we mostly left out financial policymaking and focused on the regulatory agencies responsible for financial supervision and regulation instead. The reason lies in US politics: When President Obama signed Dodd-Frank into law in 2010, he in effect delegated the formulation of numerous rules, regulations, studies and reports to the federal financial agencies. As Coglianese argues, "especially when statutory language leaves major policy issues unresolved, administrative rules can hold greater significance than even the most important acts of Congress" (Coglianese 1994, 2).[24] As we will see throughout the course of this book, this is also the case with Dodd-Frank: The agencies decide on the technical details and definitions. To provide an example, Dodd-Frank required the CFTC and the Securities and Exchange Commission (SEC) to jointly define the terms *swap* (regulated by the CFTC) and *security-based swap* (regulated by the SEC). The rules and interpretations finished and published on nearly 600 pages in 2012 triggered the commencement of many Dodd-Frank measures, including reporting standards and capital requirements (Commodity Futures Trading Commission and Securities and Exchange Commission 2012). It was therefore the SEC and the CFTC that had to dive deep into the technical details of the derivatives business and, more importantly, to decide which specific products were to be excluded from all Dodd-Frank regulation applying to derivatives and which were to be included. Compared to Congress, the regulatory agencies therefore rely much more on financial data, information and expertise; vice versa, *gaps of information and expertise at the agencies provide access points for experts, i.e. industry interest groups.*[25] For industry interest groups, the US administrative agencies have therefore become an important lobbying addressee. The number of empirical contributions examining industry and private interest group influence on the executive agencies and on US Congress is vast (Kamieniecki 2006, even though he focuses on environmental policy and rulemaking, provides an excellent overview over research). While it is not the purpose of this book to prove the dominance of either group, the distinction between legislative and executive capture should be kept in mind when reading chapters five and six (Baumgartner and Leech 1998).

24 Croley goes so far to say that, because of the volume and the importance of agency decisions, "modern government *is* administrative government" (Croley 2008, 14). He also gives a detailed account of agency decision-making in the US, and emphasizes that agencies do not produce regulations in the strict sense, but instead write rules and orders (see ibid., ch. 5 for more information).

25 We also have to keep in mind that other capture strategies – e.g. attempts to influence government officials with campaign contributions – cannot be pursued to influence agency rulemaking because they are illegal.