Regulating International Finance: The Genesis and Transformation of Central Banking Practices

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy

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University of Toronto
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Abstract

This dissertation investigates the development of financial regulation since the nineteenth century through central banks’ governing practices in industrial countries. Since central banks adopted the lender-of-last-resort function in the 1870s, they have been continuously contributing to the stabilization of financial markets. However, the nature of their governing practices has transformed. This dissertation addresses the sociological and historical underpinnings of central banks’ authority. By combining theoretical insights from interactionist sociology (e.g., Pierre Bourdieu, Norbert Elias, and Etienne Wenger) and from the philosophy of modernity (e.g., Hannah Arendt, Michel Foucault, and Jürgen Habermas), it looks into the crucial role of knowledge for financial governance in general and central banks’ authority in particular. Knowledge shapes governance in two ways. It structurally creates the conditions of possibility for certain practices to develop and it cognitively represents reality. Such representations become incorporated into the background knowledge of the community of practice. The thesis highlights the importance of modern science for governance to occur. The rise of science in economics and finance has transformed legitimate representations of the financial environment and concepts of competence and credibility defining who is entitled to act. The dissertation details three practices of financial stabilization by central banks through time, each of which stem from a distinct
market representation and cultural configuration of the community of practice. The practices I investigate are monetary-based, capital-flow-based, and standard-based practices of governance.
Acknowledgments

The PhD programme has been the most exciting yet challenging journey of my life. While dissertation-writer can feel like a reclusive hermit at times, the many people who have supported me have been essential to the completion of the project. I am extremely grateful to all of them.

I would like first to thank both of my supervisors, Emanuel Adler and Louis Pauly. Their guidance established the conditions for this PhD to materialise. I am extremely grateful to Emanuel Adler who always believed in my project and gave me continuing support all through the process. His close reading and always to-the-point comments helped me both to push my reflections further and to clarify my thinking. I am also immensely thankful to have been able to count on Louis Pauly, who has always been there when needed. I appreciated very much his pragmatic advice and support, which was essential to carry on the project until the end. Both of them proved to be invaluable mentors and I feel honoured to have had the chance to work with them. They are passionate scholars who will continue to inspire me in the years to come.

I am deeply indebted as well to the third member of my committee, Leonard Seabrooke, who has provided crucial support for this project. I cannot thank him enough for making me feel welcome in Copenhagen and helping me navigate the reality of fieldwork. I also benefited from Len’s wide knowledge of scholarship in political economy which helped me to think about my own contributions. I am also thankful to my external examiner, Stephen Bernstein and Kathleen McNamara, for their careful reading of the thesis and very pertinent comments. Thank you to Jacqueline Larson for incredibly helpful language revisions.

A special mention to Frédéric Mérand, from whom I felt continuous support all along the academic journey since the day I approached him to be my master’s supervisor. He was the first to show me that unorthodox thinking has a place in international relations, and can speak to

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mainstream theory. Frédéric’s encouragement gave me strength to pursue my studies at the doctoral level. Finally, a very big thank you to him for providing me with an academic home in Montréal for the last two years of this degree.

The PhD has been pursued from three different cities (Toronto, Montréal, and Copenhagen), and in each of these cities I would like to pay tribute to the great people with whom I had the privilege to share the journey. At the University of Toronto, I was extremely lucky to be surrounded by a wonderful and clever group of friends and colleagues. My colleagues in the IR core course provided me with the best social environment for my first year of the PhD programme. The social surrounding was also crucial in helping me achieve the various requirements of the programme, such as the comprehensive exam and proposal writing. A very special thanks to Larissa Atkinson, Alena Drieschova, Matthieu Mondou, Kiran Barnajee, Jamie Levin, Erick Lachapelle, Troy Lundblad, Abouzar Nasirzadeh, Craig Smith, Aarie Glas, Luke Melchiorre, David Houle, Luc Turgeon, Christopher Laroche, and Andrew McDougall. Special mention to the faculty members Ed Schatz, Richard Sandbrook, Lilach Gilady, and Stephen Clarkson, who provided me with helpful guidance at various points in the process. Finally, I would like to thank Carolynn Branton, Louis Tentsos, Joan Kallis, and Marie-Alice Bailey, who have been so helpful with administrative assistance.

At the Université de Montréal, I would like to pay tribute to the wonderful team of PhD students and post-docs who are members of the CEPSI and the CERIUM. They provided me with an academic home and a support group which helped me survive the dissertation writing process. Je remercie, Amélie Forgest, Theo McLauchlin, Antoine Rayroux, Mélanie Cambrezy, Sarah Saublet, Kathleen Angers, Katrin Wittig, Chantal Lavallée, Olivier Schmitt, Florent Pouponneau, Catherine Hoeffler, Paul May, and Till Van Rahden.
In Copenhagen, at the Department of Business and Politics of Copenhagen Business School, I met wonderful people who have made feel a part of their department. They have created a very special environment, where people are keen to engage with each other’s work. I feel privileged to have had the chance to be part of this institution for some time. *Mange tak* to Lasse Folke Henriksen, Kasper Lindskow, Maj Lervad Grasten, Iver Kjar, John Campbell, Martin Carstensen, Christianne Stelling, Duncan Wigan, Mette Grue Nielsen, and Lonni Nielsen. And a very special thank you to Sara Dahlman, Lene Tolstrup Christensen, Eleni Tsingou, Liam Stanley, and Timo Walter.

I am also indebted to all the professionals involved in central banks and financial regulation based in London, Paris, Basel, Frankfurt, and Copenhagen, who have been so generous with their time and accepted meetings with me. Moreover, I am extremely grateful to my new colleagues at the University of Copenhagen for having made me feel immediately welcome. I feel blessed to have the chance to continue my academic journey in such an intellectually stimulating environment. A special thank to the members of the Eurochallenge project whose support have been incredibly helpful for this transition.

As Virginia Woolf once wrote: “One cannot think well, love well, sleep well, if one has not dined well.” To that effect, I would like to acknowledge the generous financial support provided by the Social Science and Humanities Research Council of Canada (SSHRC), the Fonds de Recherche Québécois Société et Culture (FRQSC), the Ontario Graduate Scholarship (OGS) programme, and finally, the School of Graduate Studies (SGS) and the Department of Political Science at the University of Toronto.

A big thank you to my long-term friends and family for their love and support through the process. Thanks to my dearest friends, Charlotte Ménard, Marie-Ève Parenteau, Amélie Desrochers, and Anouk Godbout, who have stuck by my side even in the darkest times. Thanks
also to my parents—Anne Brunet and Réjean Dumouchel—who gave me intellectual curiosity and a taste for critical thinking. Big love to my brothers Colin Dumouchel and Leo Dumouchel who have helped me to stay grounded.

I would also like to acknowledge my chance to live at a time when it has been possible for me both as a woman and a child of the middle class to access the highest sphere of education as well as to attend some of the world’s most prestigious universities. My grandparents lived in a Québec where university’ studies were the privilege of a selected few. In coming from very large families, they had to quit school during their teenage years in order to help financially, despite being very gifted and skilled. My beloved grandparents—Jean-Paul Brunet and Denise Bourget—are amongst the most humble and openhearted people I know. They have always been a source of inspiration, and I want to share this dissertation with them.

Finally, the last acknowledgment goes to the man, Mathieu Noury, who intimately shared my life for a decade. His companionship and love contributed to defining me both as an individual and as a scholar. I cannot thank him enough for having been there for me during the whole process. My academic work will always carry the mark of the many intellectual conversations that we had together. I dedicate this thesis to him.
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Central banks have played a key role in stabilizing economic and financial markets. It is through central banks that the initial governmental regulation of the financial environment was institutionalized during the nineteenth century. Over time, central banks have recurrently acted as a short-term market stabilizer by providing liquidity (as lenders of last resort) to financial markets to ensure the uninterrupted operation of financial transactions. Central banks have also been involved in long-term stabilization endeavours in three different ways—each of which constitutes a distinct practice of stabilizing markets. The earliest efforts of central banks to ensure the stability of international markets were geared toward maintaining the gold standard. During the Bretton Woods period, central banks’ attention shifted to the control of capital flows and the maintenance of fixed exchange rates. Since the 1980s, central banks have developed various standards for prudential regulation, such as the Capital Adequacy Ratio (CAR) of banking institutions.

How and why international financial governance transform? By analysing the historical transformation of central banks’ governance of financial markets, this doctoral dissertation aims to tackle international financial governance in practice. To do so, it interrogates the conditions and mechanisms of change and stability in central banks’ authority. The continuous role of central banks’s in financial regulation makes central banks a priviledged object to understand the transformation of financial governance over time. I argue that the conditions of change are not
only material but are also related to practices and the knowledge bound within them. Therefore, I address the crucial role of knowledge for financial governance in general and in central banks’ authority in particular. Knowledge shapes governance in two ways. On the one hand, it structurally creates the conditions of possibility for certain practices to happen, and on the other, it informs cognitive representations of reality that become incorporated within the community of practice’s background knowledge. In a nutshell, the dissertation looks at the mutual constitution of knowledge and governing practice in its historical and sociological context. Along the lines of International Political Economy (IPE) scholars who draw from historical sociology, I start from the assumption that governance authorities are not universal (McNamara 2010; Seabrooke 2007; Hobden and Hobson 2002). Rather, what appear as legitimate authorities today are the product of historical and sociological change.

1. The International Political Economy’s Research Agenda on Central Banking

In general, IPE interest in central banks’ authority rose in opposition to the state-centric vision of the international arena, which underlies the discipline’s early work. The first generation of IPE scholars focused on interstate dynamics and sought to understand how global structures of rule in monetary governance changed. This approach led to the seminal theories of IPE—hegemonic stability theory and world order theory—that account for how the international structure of rules changes as the world hegemon changes (Cox 1987; Gilpin 1981; Kindleberger 1970).¹ This first generation of scholars addressed macro-structural change in international political economy, through the structural configuration of state power. The state was the prime

¹ While both hegemonic stability theory and world order theory draw on the notion of hegemony, they conceptualize it differently. In contrast with Kindleberger and Gilpin, who think of hegemony in terms of capability, Cox points out that hegemony hinges on legitimacy. World order theory therefore opposes the notion of power based on strict material forces and uses a notion of authority that is both ideational and material.
focus of their analysis, and alternatives sites of authorities, such as central banks, were
overlooked. By the 1990s, in the midst of globalization trends, scholars started to pay attention to
the apparent declining authority of the state, and the parallel rise of non-state types of authority.

Kapstein captures the general consensus of the time:

> Every age has its defining terms. In our day, one of those terms is “globalization,” which conveys the widely held belief that we are living in a borderless world. Sovereign states appear incapable of controlling transnational flows of goods and services (much less flows of people), and in many places the state itself is collapsing. (Kapstein 1994, 1)

Accordingly, a second generation of scholars has stepped away from the state and
highlighted the importance of non-state actors in financial governance. While the pioneers of this
approach focused on markets (Strange 1988; 1996), most recent studies have widened their scope
to investigate an impressive range of non-state actors, such as rating agencies (Sinclair 2000;
2005), multilateral organizations (Chwieroth 2010; Jabko 2006; Pauly 1997), financial networks
(Porter 2003; 2005a), private actors (Hall and Biersteker 2002), standard-issuing bodies (Singer
2007; Walter 2008a) and finally central banks. In investing “non-state actors,” this second
generation of scholars also departs from the state. As Cohen puts it, “the two generations have
proceeded in almost dialectical fashion, the first asserting (or assuming) the primacy of the state,
the second posing states and markets as distinct and opposing principles” (Cohen 2002, 429).

The assumption of a transfer of authority, which has constituted the IPE literature’s
research agenda on central banks, has limited the study of central banks in two ways. First, in
starting from the assumption of the relocation of authority, IPE has paid attention to formal
expression of authority and thereby implicitly created a dichotomous opposition between
private/public, non-state/state, or market/state. Such a dichotomous reading of authority is ill
suited to grasp central banks’ authority that is neither entirely private nor public. Second, the
assumption of authority that opposes market against state has shaped researchers’ perception of what is empirically valid to investigate. Consequently, the IPE literature has overlooked the continuing role of central banks in stabilizing markets over time. Instead, the discipline has typically recognized the importance of central banks in only two different contexts: the gold-standard regime and the post-1980s period.

While IPE scholars have paid attention to the effect of central banks on the gold standard at the turn of the twentieth century, their endeavour was less about understanding the authority of central banks than highlighting their governing role in making the system. In this way, IPE scholars challenged the view that the gold standard was an automatic system (Eichengreen 1992b; Polanyi 2001; Gallarotti 1995; Gilpin 1981; Kindleberger 1970; Knafo 2013). With the possibility of managing money supply, central banks aimed to mitigate the destabilizing effect of international capital inflows and outflows (Eichengreen 1992b; Knafo 2013). As Polanyi saw it,

The working of the gold standard required the lowering of domestic prices whenever the exchange was threatened by depreciation. Since deflation happens through credit restriction, it follows that the working of commodity money interfered with the working of the credit system. Central banking mitigated this defect of credit money greatly. By centralizing the supply of credit in a country, it was possible to avoid the wholesale dislocation of business and employment involved in deflation and to organize deflation in such a way as to absorb the shock and spread its burden over the whole country. (Polanyi 2001, 194)

In looking at central banks, these authors make the important argument that laissez faire never existed in practice. The discretionary power of central banks was essential to maintain convertibility, and thus to ensure the smooth conduct of the gold standard. Along these lines, Knafo argues that the gold standard system of governance, whose central banks were a key component, corresponds to “the extension of state power over financial activity ” (Knafo 2013, 6).
We have to jump to the post-1980s period to find IPE studies on central banks. In departing from the assumption of transfer of authority, IPE scholars overlooked the role of central banks during Bretton Woods because the period is considered a state-based regulated system of governance. For instance, Jacqueline Best (2005) extensively comments on the management of ambiguity in the post-war international financial governance, but does not acknowledge the role of central banks or the private sector. Focusing exclusively on so-called public actors, she overlooks the role of central bankers whose actions were key to preserving the Bretton-Woods regime. Central banks ensured capital control and maintained the convertibility of the pegged exchange rate—two measures that were at the centre of financial stability (Helleiner 1994, chapter 2; Simmons 2008, chapter 1).

In contrast, a rich corpus of IPE research has investigated central banks’ authority after the 1980s. The period witnessed important organizational changes in the structure of central banks regarding their relation with the state. By the 1990s, the number of central banks that were provided with statutory independence from the state grew exponentially. Central bank independence has been understood as the product of structural pressure caused by trade openness (Polillo and Guillén 2005), the rise of the business lobby (McNamara 2002a), a process of socialization between central banks governors (Johnson forthcoming), or as the outcome of a two-level game (Simmons and Elkins 2004). In light of this important transfer of authority, a group of IPE scholars have also theoretically investigated the authority of central banks in financial and monetary markets. To do so, they have adopted two different analytical standpoints:

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2 Best differentiates between technical ambiguity (lack of information), contested ambiguity (issued from political struggles), and inter-subjective ambiguity (the subjective understanding of the economic environment).

3 In the 1980s and the 1990s most central banks, which had been nationalized after the First World War, were granted statutory independence. For example, the Bank de France and Bank of England obtained their autonomy in 1994 and 1998 respectively.
The decisive role that central bankers played in shaping the policy of their institution has been widely acknowledged (Adolph 2013; Ahmed 2009; Axilrod 2011; Johnson Forthcoming). Also, IPE scholars have highlighted the peculiar status of central bankers in the international scene and the sense of community among them. Central bankers’ specific expertise and relative autonomy from executive bodies placed them apart from a “clear-cut notion of national interest and power politics” (Baker 2006, 106). In investigating a period when markets grew and became more complex, both Kapstein and Baker have sought to draw the new governance architecture underpinning such transformation and the role of central bankers within it. Baker highlights how central bankers are part of a transnational network of technical experts that has contributed to the emergence of what he calls the “economic consensus of the 1990s,” namely sound money and open markets (Baker 2006, chapter 4). In that trend of thought, Kapstein highlights the positional nature of central bankers’ authority. Central bankers’ ability “to influence public policy depends in large measure upon the formal and informal institutional networks that bind them to the central authorities” (Kapstein 1994, 10–11). More specifically, they are involved in a two-level game of governance in which they have to use their international networks to influence domestic opinions and vice versa. In a similar fashion, Johnson (forthcoming) shows that by adopting the international norms of central banking, central bankers from post-communists countries undermined their legitimacy within their domestic context.

In contrast to Baker, Kapstein and Johnson who focus on individuals’ authority, Hall looks at institutional authority. In drawing on John Searle’s inspired constructivist approach, Hall’s objective is to highlight the intersubjective dimension of central banks’ authority and actions. Starting with the assumption that money is a social institution, Hall argues that central
banks’ authority is socially delegated. When becoming independent, central banks were granted “status functions” that provide the institution with “deontic power”—a form of power “that is marked by such terms as: rights, duties, obligations, authorizations, permissions, empowerments, requirements, and certifications” (Searle 2005, 10). Deontic power refers to specific powers that are reproduced at an intersubjective level and through language. In focusing on deontic power, Hall goes beyond the formal expression of authority. He says that “institutional facts are generated by the collective assignment of status function to people, institutions, and objects that thereby acquire deontic power (authority resulting from an institutional deontology) that are explicable through a constitutive, rather than a causal logic” (Hall 2008, 9). Although Hall’s perspective allows us to overcome the dualistic version of authority, empirically, his studies focus on the monetary function of central banks and overlook the financial stability part. Moreover, historical change is not included in the analysis. Hall’s study remains confined to the period of fiat money and central banks’ statutory independence.

2. Authority in Practice: Rethinking the Private-Public Cleavage

By starting from the material transfer of authority, IPE studies have empirically limited the scope of their investigation. IPE scholars provide analytical attention to central banks when the power of the state is perceived as declining. Consequently, IPE overlooks the continuing governing role of central banks in financial governance. Moreover, in dealing with a dichotomous understanding of authority, these studies have to analytically contort themselves to point out the relevance of central banks. When dealing with a binary conceptualization of authority, one would be theoretically justified to look at central banks’ authority when there is an apparent relocation of authority from the state to the other centres of authority. Although central banks are theorized
as if they were external to the state, this conceptualization of authority is not justified at the empirical level. As a part of the state governing apparatus, but enjoying considerable autonomy, central banks have always displayed an authority that is neither uniquely public nor private.

Accordingly, I share the objective with other IPE scholars to challenge the binary opposition between private and public authority. For instance, in his study of the production of standards and norms in international finance, Porter (2005b), addresses the relation between public and private authorities rather than strictly focusing on one category. He argues that states legitimatize their actions by appealing to the norms produced by the private sector (Porter 2005b, 91). While Porter implicitly overcomes the strict divide between public and private, Best and Gheciu (2015) directly challenge the opposition between the two categories of authority. They argue that the traditional opposition between private and public fails to take into account the changing forms of most recent public interventions, such as the bail out of private banks. “It is only by transcending the view of the public as a separate, distinct entity or social space and by embracing the view of public as practice that we can understand the nature and consequences of the contemporary “return of the public” (Best and Gheciu 2015, 5). Along these lines, I argue that practice theory has the potential to overcome the traditional dichotomies between public and private, and thus is better suited to analyse central banking over time. However, unlike Best and Gheciu who uses practice as an ontological claim (public as a practice), I make a theoretical claim (investigating governance through the lenses of practice).

A practice-based perspective on authority investigates authority-in-the-making; it thus moves the empirical focus from fixed institutions to dynamic patterns of governance. As such, a practice-based analysis does not impose any preconceptions about the institution performing the practice or the nature of its authority. A practice can be crystallized within a specific institution, but it goes beyond that institution: it also draws on knowledge and instruments that make such a
practice possible. In that sense, engaging with practice can transcend the dichotomy between public and private authority because it goes beyond the state (which has constituted the primordial reference point in IPE and governance studies). From a practice point of view, the state is deinstitutionalized (Pouliot 2013). Far from seeing the state as an immovable entity, an analysis that looks at the practice of authority reconceptualizes states in their historical context and opens up the possibility that the state will not constitute the principal centre of authority in the future. Because a practice-based authority does not assume any specific sites of authority, public and private and state and non-state actors are not mutually exclusive categories. Therefore, in offering a dynamic conception of authority, a practice-based analysis can grasp which institutions combine both private and public authority, such as central banks.

In contrast to material studies of authority, a practice perspective deals with a broader ontology: it engages with the constitutive aspect of interaction. Instead of taking formal boundaries for granted, it tries to pin them down (Sending and Neumann 2011, 20). Dealing with practice implies seeing “how, on the ground, most political dynamics come to rest on the fixation of meanings” (Adler and Pouliot 2011b, 2). In drawing on practice, I am interested in knowledge as the main *explanans* of governing change. The dissertation emphasizes the rise of scientific economics and finance that have created new ways to represent markets and thus opened new possibilities for governance. Such knowledge is not automatically incorporated into practices. The dissertation also looks at the community of practice, which mediates how new types of knowledge are incorporated into the practice. Practitioners institutionalize new practices as they make new expertise converge with their own cultural background as well as the pragmatic constraints of reality. Accordingly, change in central banking governance occurred at level of the community of practice, which is interacting with the larger symbolic and representational structures around them.
As such, the methodological framework of this thesis is geared to the analysis of knowledge through practice. First, I use “genealogy” to recover the epistemic and representational shifts related to central banking. Second, I use an ethnological method called “polymorphous engagement” to draw the social dynamics through which knowledge is processed.4

3. Central Banks’ Governing Practice

The dissertation aims to explain changes in governance but consistent with the practice framework, the *explanandum* of this thesis is not pure material expression of governance, such as institutions or formal rules, but rather “governing practices.” “Governing practice” refers to a specific way of *representing* and *shaping* how things and people are disposed and organized in the international realm. Applied to central bank governance in financial markets, governing practices thus refer to the different ways that central banks represent and intervene in financial markets. Such a practice hinges on both material and ideational dimensions. Indeed, interventions and representations are intrinsically connected (Hacking 1983; 1999; Miller and Rose 2008). The way one intervenes upon an object depends on how the object is represented, as well as on the techniques and technologies through which intervention takes form. In other words, knowledge makes control possible. For example, central banks started to be able to control inflation only when the relationship between the discount rate and the money supply was established. But it is important not to conflate practice with instruments. A practice is a broader concept than an instrument—a governing practice encompasses different instruments. For instance, the CAR and financial diversification are different instruments, but are part of the same governing practices.

4 Chapter 2 explains genealogy and polymorphous engagement in more detail.
They are both standard-based instruments and framed as prudential management of financial risks by the industry. Moreover, both target very technical aspects of banking activities. What defines a specific governing practice is first a privileged sphere of intervention and second a constant rationale about how this intervention must be performed. Based on these criteria, I argue that central banks, over time, have adopted three distinct governing practices to stabilize financial markets: monetary-based, capital-flows-based, and standard-based governing practices (see table 1.1).

**Table 1.1: Central Banks’ Governing Practices**

<table>
<thead>
<tr>
<th>Governing practices</th>
<th>Sphere of intervention</th>
<th>Rationality</th>
<th>Instruments</th>
</tr>
</thead>
</table>
| **Monetary-based**  | Concrete object of credit (i.e., money, bills) | Ensuring convertibility | - Real bill doctrine  
- Palmer rule |
| **Capital flows-based** | Financial flows | Constraining financial flows | - Capital control  
- Pegged exchange rate |
| **Standard-based**  | Banks’ activity | Issuing standards of good conducts to offset risks | - Diverse macro and micro-prudential instruments |

The first governing practice that central banks adopted to assure financial stability was monetary-based in the sense that money convertibility was the cornerstone of such a practice. Indeed, between 1870s and World War I, the smooth conduct of haute finance was assured through money convertibility and maintenance of the gold standard (Polanyi 2001). No formal coordinated effort established the gold standard regime; the decision to adopt gold as a standard for money was taken unilaterally by most countries. Long-term financial stability was secured through domestic adherence to the rules of the game (Borio, Toniolo, and Clement 2008;
Gallarotti 1995). In fact, the gold standard period was the only period in which central banks had unified rules to ensure financial and monetary stability at the same time (Borio, Toniolo, and Clement 2008, 27; Goodhart 2010).

In the interwar period, some new governing practices were experienced, but no stable governing practices were institutionalized.\(^5\) It was after the Second World War that central banks adopted a new way of stabilizing financial markets—controlling the expansion of financial capital flows (capital flow-based governing practices). Post-Second World War financial governing practices relied on capital controls and the convertibility of the pegged exchange rate. Even though the Bretton Woods era is perceived as a period in which central bankers were agents of government, central bankers continued to cooperate through the European Payment Union and the Bank for International Settlements (BIS) established in 1930. “The key was the protection of the gold-dollar convertibility that formed the basis of the system, and a number of joint central bank initiatives were developed to this end, including the Gold Pool, central bank swap arrangements, and sterling support” (Simmons 2008, 5). Therefore, the practice of capital control and pegged exchange rates contributed to the formation of a constrained financial system that was intrinsically safe; banking and currency crises were extremely rare at the time (Eichengreen and Bordo 2003).

With the abolition of a fixed exchange rate and liberalization of capital controls, central banks gradually stopped intervening directly on financial flows.\(^6\) Paradoxically, while the post-1980s period has been characterized as seeing “the triumph of the market,” central banks’ authority had not disappeared. In fact some consider the post-1980s as the “era of central banks”

\(^5\) The London conference of 1933, as Pauly pointed out (1997, 64–67), generated a fruitful debate on how to best ensure financial stability. It was the first time that the idea of economic oversight was considered.

\(^6\) As Goodman and Pauly explain, countries experiencing capital inflows moved away from capital control at the beginning of the 1980s, while the ones experiencing capital outflows moved away at the end of the decade (Goodman and Pauly 1993, 51).
(Patat 2003). Since the end of the 1980s, central banks gradually adopted a standard-based practice, consisting in setting standards of good practice.\(^7\) In the financial literature, this practice is also called prudential regulations because it adopts a preventive stance on risk management. The position of central banks vis-à-vis the market was mainly supervisory. Standards are issued by transgovernmental technical committees composed of central bankers whose numbers have been thriving since the 1970s.\(^8\) Since Basel I, prudential regulations have increasingly attracted the attention of central bankers up to and after the 2008 financial crisis. After the crisis, regulatory attention turned toward macro-prudential regulation in which central banks have been attributed a central role (Baker 2013; L.M. Goodhart 2014). Moreover, the European Central Bank identifies prudential regulations as the main tool with which the stability of the financial system should be sustained in the long run.

\section*{4. Outline of the Dissertation}

In the next chapter, I develop the analytical and methodological frameworks that can adequately tackle governance in the making. I analyze how practice makes up both an epistemic dimension and a cognitive dimension of central bank authority. Chapters 3 to 6 present the empirical findings. In chapter 3, I explore the epistemic foundations of central banks’ authority. To do so, I analyze the historical turning point when central banks endorsed a supervisory role over financial markets. This authority stems from the perception that intervention in the financial market has to be rationally defined and governmentally performed. Rationalization has had a role

\(^7\) On the practice of setting standards in the financial industry see Singer 2007.

\(^8\) At the Bank of International Settlements (BIS), there are three specialized committees: the Basel Committee on Banking Supervision (BCBS), the Committee on Payment and Settlement Systems (CPSS), and the Euro-currency Standing Committee that was renamed the Committee on the Global Financial System in 2010. Central bankers have been members of the Financial Stability Forum, renamed the Financial Stability Board in 2009, in addition to participating in spring and fall meeting sessions of the IMF and the World Bank.
to play in financial governance since the nineteenth century. The three subsequent chapters address the content of central banks’ practice during three different periods: the gold standard era (chapter 4), the Bretton Woods period (chapter 5), and the age of global finance (chapter 6). In each, I explore the interaction between available knowledge, the cultural configuration of the community of practice, and the implementation of practice. Whereas the gold standard was defined through traditional banking knowledge, the central banks’ practice during the Bretton Woods period and the age of global finance were constituted through the scientific project. Chapter 5 shows the impact of the rise of economics science on central banks’ practice and chapter 6 addresses the impact of financial science’s rise.

9 In that sense, my analysis steps away from Marcussen who sees the “scientization” of central banks as being a characteristic of the current period (Marcussen 2009).
Studies of global governance deal with the state in a paradoxical way. While they seek to move the focus away from state authority, they take the state as their referential point to understand new patterns of authority. Since Roseneau and Czempiel Governance Without Government (1992), which triggered studies of global governance, patterns of authority have been conceptualized as the relocation of state authority. This does not come from nowhere: studies on global governance have thrived in a context in which state authority has been visibly eroding and state sovereignty has transformed within the last thirty years. However, studies on global governance have created a dualistic way to understand authority, such as the opposition between private and public authority, or state and non-state actors. The main problem with such a binary conceptualization of authority is that it is ill suited to the analysis of institutions such as central banks that display power that is both private and public. In the introductory chapter I showed how a framework based on the practice of governance goes beyond formal authority and thus can better grasp the interaction between private and public authority. As such, a practice-based analysis is better equipped to analyze central banks because it can investigate authority-in-the-making, which moves the empirical focus from fixed institutions to dynamic patterns of governance.

In this chapter, I outline what a practice theory of governance entails as well as the methodological framework. I highlight the constitutive importance of the modern project of
science for global governance in general and central banks’ governing practices in particular. The very act of governing hinges on the modern project of experimental science, which has transformed our way of apprehending reality. Central banks’ interventions in financial markets have varied along with the constant “scientization” of the economic environment and significant transformations of market representations. Such new representations are institutionalized at the level of practice through the practice community of central bankers. Practitioners institutionalize new practices as they make new expertise converge with their own cultural background as well as the pragmatic constraints of reality. To make this argument, I contextualize a practice-oriented theory of governance within the “practice turn” in International Relations (IR) that has recently been advocated by Adler and Pouliot (2011a; 2011b). I argue that there is a specific logic of social action underlying the practice of governing, which differs from others social practices in world politics, such as diplomacy and security. In the second part, I detail the theoretical framework of a practice-oriented theory of governance. I demonstrate that there are two dimensions of practices: an epistemic and cognitive one. And for each of these dimensions, I highlight the logic behind governing practices. In the third part, I apply the theoretical framework to central banks’ intervention in financial markets and highlight the conditions and mechanisms through which central banks’ practices change. Finally, the last part outlines the methodological framework of this research.

1. The Practice Turn and Governance

Adler and Pouliot encourage us to take the practice turn in a wide range of empirical domains: “a focus on international practices better accounts for the many faces of world politics … as a part of doing in and on the world” (2011b, 2). To date, the practice turn has mainly
produced studies in the field of security and diplomacy, and developed a theoretical framework accordingly. The investigation of governance through the framework of practice remains uncharted territory. To adequately understand the practice of governance one has to take into account the specific logic of governing. And to uncover such a logic, it is necessary to investigate substantively the epistemic dimension of practice. Going back to the epistemic dimension means returning to the fundamentals of what it means to govern, the most deeply integrated knowledge that has created the conditions of possibility for governance to happen, which is then reproduced through the daily performance of governance. The epistemic dimension thus helps us to understand the specificity of the social practice of the very act of governing with respect to other types of social actions in world politics, such as diplomacy and security. At the fundamental level, governance is about managing the international domain, whereas diplomacy and security are about organizing world politics. In pointing out that a practice theory of governance has to take into account the specific logic of governing, I do not reject the theoretical framework of the practice turn, but rather propose an amendment to that framework. In other words, underlying the study of governance through the framework of practice, there is a “logic of governing” beyond “the logic of practicality” (Pouliot 2008).

Adler and Pouliot’s call for a practice turn in IR follows a similar turn in social science (Schatzki, Knorr-Cetina, and Savigny 2001), and parallel intellectual moves in IR coming from pragmatism (Friedrichs and Kratochwil 2009) and poststructuralism (Neumann 2002). The invitation to look at international relations through the framework of practice follows two main objectives. First, starting from practices generates rich empirics-driven research within constructivism: “we want to explain how, on the ground, most political dynamics come to rest on the fixation of meanings” (2011b, 2). In starting from the assumption that the world is intersubjective, constructivism has traditionally dealt with the content of intersubjective
structures or, in other words, has focused on the norms and ideas that shape world politics. As Adler and Pouliot point out, this intersubjectivity is “mediated in the form of practices” (2011b, 2). Ideas, meanings, and knowledge are processed through the performance of practice in world politics. In that sense, a practice would start from the empirical expressions of ideas instead of the ideas themselves. For instance, Brunnée and Toope (2012) address the legal norms of the global climate regime by looking at the practice of annual climate meetings.

Second, looking at international relations through the framework of practice allows us to overcome the most important dichotomies in IR: between agent and structure and the material and the subjective. Practices are the daily performance of culturally embedded sets of rules that are socially shared. Thus, at the conceptual level, practices occupy the space where agent and structure as well as the cultural and the material overlap. Practices are, on the one hand, rooted in the schemes of meanings shared by the communities who perform them, and on the other, in the material context that makes practices possible and sustainable. “Practices translate structural background intersubjective knowledge into intentional acts and endow them with social meaning. Structure, in turn, shows up in practice in the form of standards of competence that are socially recognized” (Adler and Pouliot 2011b, 16).

To date, the practice turn has mainly investigated practices in the domains of security and diplomacy. As a result, it focuses on collaboration and interaction. Indeed, most of the questions in the field of diplomacy revolve around the question of how international interactions shape a specific outcome. In that spirit, building on Schelling, Adler and Pouliot develop a practice-oriented explanation of strategic interactions. For them, the outcomes of strategic interactions are not exclusively driven from power and interests as rational choice theories suggest, or diffusion of ideas as constructivism argues—they are constructed through “the game per se of strategic interactions” (2011, 19). Practices shape the nature of interactions. “What states do vs. other
states, the moves they make, the signals they give, and the language they speak are constituted by the practices they share” (2011, 20). As an example, the authors give the case of nuclear deterrence and arms control which, they argue, as a practice gradually shaped strategic interactions between the United States and the Soviet Union during the Cold War.

The United States and the Soviet Union did not constitute a community of deterrence and arms control practice at the beginning of the Cold War. It was practice that turned the superpowers into players of a nuclear deterrence and arms control game. In time, however, the superpowers adopted identities that were associated with a community of deterrence and arms control practice and learned to competently perform the moves required to deter each other and thus to prevent nuclear war. (Adler and Pouliot 2011b, 20–23)

Because Adler and Pouliot’s theoretical attention is focused on demonstrating how practice can better explain outcomes in world politics, they do not substantively interrogate the epistemic foundations of the game that is played. They therefore fail to point out the conditions of possibility for such games to happen or their fundamental characteristics. By putting the epistemic dimension at the forefront of analysis, it becomes possible to understand the specific nature of the social practice being studied. What does it mean to practise diplomacy or governance? What makes these practices possible? I argue that the fundamental purpose underlying governance differs from the fundamental purpose underlying diplomatic and security relations. Whereas diplomacy and security are about organizing world politics, governance is about managing the international domain. To say it differently, while diplomacy deals with the problem of sovereignty, governance relates to the problem of government. This distinction between sovereignty and government was put forward by Michel Foucault (2004) in his work on governmentality. For Foucault, what distinguishes sovereignty from government is the finite nature of political power. Whereas the limits of sovereignty are circular, the finitude of government is not. “With sovereignty the instrument that allowed it to achieve its aims—that is
to say, obedience to the laws—was the law itself: law and sovereignty were absolutely inseparable” (Foucault 1991, 95). In contrast, the problem of government is a management problem. It consists in acting upon people and things to satisfy different aims, such as stability, growth, efficiency, etc. “With government it is a question not of imposing law on men, but of disposing things: that is to say, of employing tactics rather than laws, and even of using laws themselves as tactics—to arrange things in such a way that, through a certain number of means, such and such ends may be achieved” (Foucault 1991, 95).

Just as sovereignty constitutes diplomacy, government constitutes governance. Traditional diplomacy is made possible from a conception of the world that is territorially defined. In contrast, governance hinges on an abstract conceptualization of reality that opens the door to technical interventions. Consequently, a practice theory of governance has to include in its framework different theoretical elements that have been ignored by the studies made in the context of the practice turn, namely the role of representational knowledge (i.e., know what?) and what provides the capacity to intervene.

2. The Two Dimensions of a Practice-Oriented Theory of Governance

A practice-oriented theory of governance aims to overcome the dichotomy between private and public authority, and offers the theoretical tools to analyze institutions in a “deinstitutionalized” fashion. There are two dimensions of practice: an epistemic and a cognitive one. The epistemic level establishes the conditions of possibility for certain practices to take place, while the cognitive level structures the social interactions whereby practices emerge, and therefore the practices themselves.
Such a theoretical framework is rooted in two streams of literature. It juxtaposes the theories of social interactions (i.e., Pierre Bourdieu, Norbert Elias, Erving Goffman, Etienne Wenger) that have made up the theoretical bedrock of the practice turn in IR with theories addressing the philosophical specificity of modern science and techniques (i.e., Hannah Arendt, Michel Foucault, Jurgen Habermas). These two frameworks complement each other. On the one hand, interactionist sociologists look at the making of representations, expectations, and social identities within the social interactions of everyday life, but they ignore the specific nature of the historical context in which such social interactions take place. In other words, they overlook the role of contingence. I’ll draw on Erving Goffman’s theatrical metaphor to illustrate my point: while interactionist sociology looks at the play and the scene of social life, it tends to ignore the theatre, which has been shaped in a specific way through history and constrains the spectrum of possibilities of what can happen in the play.

On the other hand, Arendt and Foucault take the role of historical contingence seriously and thus place substantive epistemic change at the core of their analysis. Ideational contexts change with historical periods, which in turn change the limits of possible action: every given order involves the crystallization of a certain regime of truth, which makes some actions possible and excludes others. For instance, the conception of the modern sovereign state with clear territorial boundaries, which renders possible nowadays diplomatic practices, found its origin in the 16th century (Branch 2011). IR scholars who draw on Foucault conceptualize the transmission between knowledge and practice as quasi-automatics. Indeed, in referring to the “productivity of discourses” (Milliken 1999) or the “performativity of knowledge” (Callon 1998a; MacKenzie 2008), they bracket the question of transmission. In contrast, interactionist sociologists start with the premise that political practices are constructed through social interactions; the social world is the source or transmission mechanism between ideas and political practices. As such, combining
interactionist sociology with the philosophy of modernity allows us to take into account both the role of contingency and social actions in the making of practices.

The Epistemic Dimension of Practice

The epistemic dimension is the most fundamental dimension of practice because it defines the reality in which practices take place. The epistemic dimension refers to the basic categories of thought that make reality meaningful and intelligible. As such, it establishes the condition of possibility for certain practices to exist. Indeed, within every given epistemic order, there is a “regime of truth” that makes some actions possible and excludes others (Foucault 1971). Epistemic order shapes what we perceive as desirable and possible—as such order changes, our perception of what is possible also changes.

Therefore, looking at the epistemic foundation of practice consists of interrogating the “deepest layer of social knowledge, which, productive of what social reality is, helps constitute the order of things” (Adler and Bernstein 2010, 295). Investigating the epistemic level starts with two main premises. First, reality is contingent. Saying that reality is contingent opens up the possibility that things could have been otherwise. Indeed, there is no such thing as a pre-given reality. Reality is historically constituted and changes in time and place. That said, pointing out the historical construction of reality does not lead us to assume that such a construction follows a predetermined linear process. Rather, it sees history as produced through the convergence of different dynamics. History is made of contested dynamics. What makes the present meaningful and credible is the blockage of certain epistemic orders in the past. Therefore, the idea of
contingency makes stability as puzzling as change. As Miliken puts it, “orderliness needs to be worked for it to be reproduced” (1999, 242).

Second, there is no sharp divide between the material and the subjective world. What appears meaningful to us is produced through discursive categories, such as state and money. To remain meaningful in the eyes of society, such categories need to be embedded in some sort of institutional settings (material and ideational). For example, the subjective understanding of the state is formed through language when one talks about the state. But such an understanding is also operationalized through material dimensions such as government, flag, and territory. Moreover, the material dimension through which the concept of the state is operationalized helps to reproduce or transform our understanding of what a state is. As Milliken points out regarding Foucault’s analysis, the subjective categories need material institutions to be reproduced and vice versa.

In Foucault’s analysis, a significative process of definition was necessary—but not sufficient—in order to create a disciplinary society. Rather, the meaning of categories for “the criminal” and “the delinquent” also had to be operationalized through measures organizing space in prisons and practices of surveillance developed to regulate the lives of prison inmates. (Milliken 1999, 241)

The Epistemic Dimension of Practice and the Logic of Governing

In a nutshell, the epistemic dimension of practice defines the limits of the possible reality in which practices take place. Such a reality is contingent and encompasses a material and subjective dimension that overlap with one another. Since the epistemic dimension defines what is and is not possible, to address the epistemic dimension in the context of governance it is necessary to ask what the very act of governing implies in the first place. At the most fundamental level, governing is about intervening in and managing our environment. The idea of externally managing and intervening in reality is not universal but appeared with the modern
project of science. Because the idea of science is now so entrenched in our society that it seems natural, we tend to forget that the emergence of modern science is historically situated. Science in the modern sense of the term was produced by the enlightenment. The transformations underlying the gradual expansion of modern science created the conditions of possibility for governance to take place. Understanding the epistemic order underlying modern science therefore helps us understand the specificity of the logic of governance.

The practice of governance is intrinsically related with the possibility to governmentally and technically intervene on different domains of our reality, such as the environment, population, and economy. As Habermas argues, modern experimental science and techniques are interrelated. “Since Galileo, experimental modern science has unfolded within a methodological referential system that reflects the transcendental possibility of technically acting upon things.” Indeed, the emergence of modern experimental science has revolutionized our modes of thinking. As the philosopher and historian of science Alexandre Koyré comments,

> Time and again, when studying the history of scientific and philosophical thought in the sixteenth and the seventeenth centuries—they are, indeed, so closely interrelated and linked together that, separated, they become un-understandable—I have been forced to recognize, as many others have before me, that during this period human, or at least European minds, underwent a deep revolution which changed the very framework and patterns of our thinking and of which modern science and modern philosophy are, at the same time, the root and the fruit. (Koyré 1957, 1)

Drori and Meyer have pointed out that science has gradually spread to various spheres of life in a process they call scientization (Drori and Meyer 2006, 51). “The scientization of society and the socialization of science are the ‘yin and yang’ of the tale of science–society relations, signaling the increasing interpenetration between science and society” (Drori and Meyer 2006,

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1 In that line of thought, Adorno and Horkheimer see the project of the enlightenment as one that aims to install humans as masters of nature (Adorno and Horkheimer 2002).

2 “Les sciences expérimentales modernes se déploient depuis l’époque de Galilée dans un système de références méthodologiques qui reflète la perspective transcendantale d’une possibilité de disposer techniquement des choses” (Habermas 1990, 36, my translation).
Here, I am mainly interested in scientization in the context of governance. Three interconnected processes underlie scientization that influence the possibilities for governance: disentanglement, rationalization, and problematization.

The process of our own disentanglement from the anthropologic sphere of existence is the first subjective change that makes the idea of governing possible. It is the process through which certain elements connected in essence to human reality become external to us. The externalization of reality opens up the possibility of intervention in the sense that it puts us in a position to externally intervene on reality. A good example of this process is genetics. Genetics, or the capacity to intervene on genes, stems from the molecular-genomic model of the body, which represents life as information (Kay 2000). Understanding the body as information removes the human component of life, and thus dislodges the idea of life from human life (Rose 2007). As Arendt argues, this process started with the emergence of modern science. She uses the Archimedean point to qualify this “alienation” of humans from nature in honour of Archimedes’s wish to find “a point outside the earth from which to unhinge the world” (Arendt 1958, 262). The idea of an Archimedean point emerged with Galileo who observed for the first time that it is not the earth but the sun that is at the centre of the universe. Dismantling the idea that we are at the centre of the universe contributed to imagining ourselves in a position of externality vis-à-vis our world. Such a position is the necessary condition for acting upon something.

More importantly, Galileo’s discovery introduced the idea that our human senses’ perception of reality can be erroneous. Through his telescope, Galileo proved that what humans had perceived as the truth—that Earth was situated at the centre of the cosmic system—was in fact erroneous. He thus confirmed “the ancient fear that our sense, our very organs for the reception of reality might betray us” (Arendt 1958, 262). This had two main consequences. First, it separated being from appearance. When true knowledge cannot appear to us through being, the
only hope for truth’s hold involves getting rid of appearance. Second, because Galileo broke with a vision of knowledge obtained from our experience as humans, he paved the way for the emergence of experimental sciences, which involve knowledge that is not tied to any experience.

In the experiment man realized his newly won freedom from the shackles of earth-bound experience; instead of observing natural phenomena as they were given to him, he placed nature under the conditions of his own mind, that is, under conditions won from a universal, astrophysical viewpoint, a cosmic standpoint outside nature itself. (Arendt 1958, 265)

With modern science emerged an abstract knowledge that was different in form than the Greek conception of true knowledge. While the Greeks believed that true knowledge started from reason and observation of the world as it was, modern science starts from doubt. In the modern conception of knowledge, various domains of the world are conceptualized as a puzzle, and it is through rationalization that we aim to address those puzzles. But such a process implies detaching the object of reason from its human nature. As Weber argues, rationalization refers to the intellectualization of life: the process under which calculation and standard rules are substituted for emotions or traditions. For Weber, rationalization transforms the nature of our social interactions because it involves “the depersonalization of social relations by the extension of technical power over nature and society and the increased importance of calculation and specialization.”³ Rationalizing a sphere of reality imposes abstract knowledge on things that are not abstract by essence. Take, for example, the economy which is first and foremost a social activity. The law of economic activities is not a given. It is through rationalizing the economic sphere that we came to understand economics as an abstract concept.

Rationalization goes hand in hand with problematization. When things are seen as natural, we do not think about them. “[Problems] are not pre-given, lying there waiting to be revealed.

³ « La dépersonnalisation des relations sociales, par l’augmentation du pouvoir technique sur la nature et la société, par l’importance croissante du calcul et de la spécialisation » (qtd. in Martuccelli 1999, 203, my translation).
They have to be constructed and made visible” (Miller and Rose 2008, 14). In fact, rational thinking and problematization enforce one another. New knowledge makes certain things problematic, and the perception of something as problematic leads to rational thinking. For example, Foucault argues that the problem of government was addressed for the first time in the sixteenth century. As he noticed, at a time when feudalism was shattered, a new literature on the “art of governing” thrived, and questions such as “how to govern oneself,” “how to be governed,” “how to govern others,” started to be asked (Foucault 1991, 87). At the time, the question of governance mainly revolved around the question of the state. In the old conception, the state was subsumed to the character of the sovereign and the main problems to be addressed concerned the protection of the kingdom, as articulated in *The Prince* by Machiavelli. In dialogue with this old notion, a new conception of the art of governing emerged whereby governing turned to the population. Also, for the first time, the art of governing came to be understood as existing independently from the action of the Prince.  

**The Cognitive Dimension of Practice**

Knowledge does not float in the air but is situated in the minds of social agents. By the cognitive dimension of practice I mean the dimension by which practice is socially constructed. As interactionist sociologists point out, mental schemes of perception are shaped through interactions and thus depend on the social context in which social agents evolve. As much as social agents shape the environment around them through their everyday activities, the environment in which they evolve influences the way they are, think, and act. Investigating the

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4 To that effect, Foucault mentions an important “anti-Machiavelli” literature that was published in reaction to *The Prince* (Foucault 2004, 93–104).
cognitive dimension of practice therefore corresponds to analyzing the rules of social actions from which a practice originates.

Interactionist sociologists have in common the perception that outcomes of social action are shaped not by standard cognitive procedures like cost-benefit calculations but by the dispositions of agents, which in turn are constructed through interactions with their social positions. Social positions are associated with a cognitive environment, which shapes the perception of what to do in a given circumstance. For example, Frédéric Mérand has shown that in the process of the creation of the European Security and Defence Policy, the negotiators’ opinions did not follow the traditional national representations of power structure as realism would have assumed, but instead were aligned with their profession and the way they perceived the role they had to play in the larger social game (Mérand 2008). “While defence actors push for solutions to the problems of capabilities and interoperability, diplomats see themselves as involved in a larger game, which is to make the European Union, and their countries within it, more influential in world affairs” (Mérand 2008, 135).

To explain the matrices in which individuals’ perceptions are formed through social interactions, Pierre Bourdieu and Norbert Elias use the word *habitus*. For Elias, *habitus* is what connects individuals with society. It gives individuals both their specificity and their commonality. It is “what might be called an unmistakable individual handwriting that grows out of the social script” (Elias 2001, 182). For Bourdieu, even though there is a habitus that characterizes any individual, every social structure has a specific habitus related to it. In Bourdieu’s words, habitus is defined as systems of durable, transposable *disposition*, structured structures predisposed to function as structuring structures, that is, as principles of the generation and structuring of practice and representations which can be objectively “regulated” and “regular” without in any way being the product of obedience to rules, objectively adapted to their goals without presupposing a conscious aiming at ends or an express
mastery of the operation necessary to attain them and, being all this, collectively orchestrated without being the product of the orchestrating action of a conductor. (Bourdieu 1977, 72)

In short, habitus corresponds to a cognitive structure of knowledge that is made through social interactions and influences the everyday actions of social agents. Habitus thus depends on the different social structures in which interactions take place. Because these social structures are not visible, interactionist sociologists have used different concepts to characterize them. Bourdieu, for instance, differentiates social structures by domain of activities—what he calls a field, such as the literary field (Bourdieu 1996a) or the bureaucratic field (Bourdieu 1999). Working from a similar perspective, Abbott uses the term professions (Abbott 1988). Like a game in every field, each profession has a way to classify the world, diagnose a problem, and propose solutions (Abbott 1988, 40–47). However, Abbott’s notion of profession is institutionally defined whereas Bourdieu’s field is issue defined.

With these ideas in mind, we can see how a practice is produced at the cognitive level through both a patterned scheme of perception and a specific social structure, which are two sides of the same coin. I propose the concept of “community of practice” to grasp the cognitive dimension of practice. In a fashion similar to Bourdieu’s concept of “field” or Abbott’s “professions,” a community of practice overcomes the dichotomy between structure and agent and the subjective and the material (Adler 2008; Wenger 1998). A community of practice not only performs a specific practice but is also constituted by it. The concept of “community of practice” offers a more precise grasp of the social structure underpinning a practice than “field” and “profession” because it starts from the emperical expression of the practice and designates the group of social agents that are bound by the performance of the same practice. A community of practice can thus include individuals with different professions. For instance, during the Cold War, not only diplomats were practising deterrence but so were officials from military services or
executive state departments. A “community of practice” is also more precise than the concept of “field,” whose boundaries are sometimes tricky to define. Most of the time, “field” designates a domain of activities, such as the field of literature (Bourdieu 1996a), but it can also designate more abstract terms, such as the field of power (Bourdieu 1996b).

In the words of Emanuel Adler:

*Communities of practice* ‘consist of people who are informally as well as contextually bound by a shared interest in learning and applying a common practice.’ More specifically, they are a configuration of a *domain of knowledge*, which constitutes like-mindedness, a *community of people*, which creates the social fabric of learning, and a *shared practice*, which embodies the knowledge the community develops, shares, and maintains.’ (Adler 2005, 15)

A community of practice differs from the widely used concept of “epistemic community” in IR, which has been defined as a “network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue area” (Haas 1992). While both concepts deal with expertise and community, they do not relate to practices in the same way. Epistemic communities influence practices from the outside; they are independent from them. In contrast, a community of practice is constituted around and through practice; a community of practice and practice are not ontologically separable. Not only does a practice community share common knowledge, as the concept of epistemic community assumes, but it is also constituted by such knowledge.

*The Cognitive Dimension and the Logic of Governing*

Taking into account the logic of governance in a practice-oriented theory forces us to revisit the underlying conceptual framework of the practice turn in two ways. First, the logic of governance challenges the way the IR practice turn has conceptualized the type of knowledge that practices emerge from—coined by the term “practical knowledge” (Pouliot 2008). Defined
as a “tacit, inarticulate, and automatic” form of knowledge, practical knowledge has been erroneously opposed to representational knowledge—a “reflexive and conscious type of knowledge” (Pouliot 2008, 279). Indeed, within governing practices, conscious and reflexive knowledge are an important part of the knowledge activated through practices. Second, taking into account the logic of governing leads us to incorporate into the analysis the capacity to act—an element that has been neglected by the practice turn in IR until now. Because questions of diplomacy or security hinge on the traditional authority of the state, questions of governance challenge such authority. Consequently, to understand governing in the making, we have to question what makes governance able to be practised.

**Redefining Practical Knowledge.** The practice turn in IR has associated practical knowledge with what John Searle calls “background knowledge,” a pre-intentional type of knowledge. As Searle explains, “background knowledge” is what makes people know that you read books in bookstores and eat food in restaurants, and you do not eat books and read foods (Searle 1998, 108). Background knowledge is a set of capacities, abilities, tendencies, habits, dispositions, taken-for-granted presuppositions, and “know-how” (Searle 1998, 108). For Pouliot, practical knowledge is opposed to representational knowledge. As a criticism of IR’s understanding of the social, he argues that IR theory has hitherto suffered from a representational bias: “most theories of social action focus on what agents think about at the expense of what they think from” (Pouliot 2008, 257).

In opposing representational knowledge with practical knowledge, Pouliot makes the important point that pre-intentional knowledge (common sense) has a crucial role to play in how we act on an everyday basis—a role that IR theory has overlooked. However, with such a dichotomy, Pouliot offers a biased definition of practical knowledge. Unlike what he argues, the knowledge that is activated through practice is both conscious and unconscious. As I explained
earlier, abstract knowledge defines the very act of governing. Modern science has changed the fundamental categories through which we understand the world and relate to it. Therefore, in opposing tacit knowledge to representational knowledge, Pouliot ignores the contingent character of representational knowledge and by the same token fails to see the practical role of science in the everyday conduct of contemporary world politics. In connection with that problem, Pouliot creates an artificial division between practitioners and scientists, and assumes that scientists have a monopoly on scientific knowledge when he argues that “contrary to practitioners, who act in and on the world, social scientists spend careers and live thinking about ideas, deliberating about theories, and representing knowledge” (Pouliot 2008, 261). But the boundary between the academic world and the scientific world is not as clear-cut as Pouliot seems to assume. Whereas the academic world has increasingly oriented its research to pragmatic concerns, the political world has more and more drawn on expertise to develop various policies. Different types of experts are included in state bureaucracies. International organizations, such as the IMF, similarly derive their authority from the expertise they produce (Barnett and Finnemore 2004).

When taking into account the logic of governing in a practice-oriented framework, it therefore becomes necessary to revisit the notion of practical knowledge. Practical knowledge is not opposed to representational knowledge as Pouliot argues, but is rather made of abstract and pragmatist thinking. Indeed, on the one hand, representational knowledge plays a key role in the enactment of practices because it provides the referential point by which practitioners of governance represent the reality they intervene upon. Indeed, interventions at the governmental level presuppose an abstract vision of reality. Intervention thus involves knowledge that is not context specific. Take, for example, the idea of the economy. On an everyday basis, we see

\[\text{Footnote 5: For studies on the transformation of universities' research models, for the US case see Mirowski 2011. For the European case, see Bruno 2008; and for Canada see Atkinson-Grosjean 2006.}\]
economic activities with our own eyes, such as transactions at the store, bill payments, etc. But such economic activities develop spontaneously in a specific context. If representations of economic activities were exclusively based on context-specific expressions of economy, it would not be possible to regulate them unless there was a regulative entity for each context. To be able to regulate the economy at the national or international level, it is necessary to have a coherent idea of what is a national or international market. Such ideas are not possible to perceive with our own senses. To be able to perceive these types of market, it is necessary to abstractly think about economic activities and make them visible with the help of indicators, such as the Gross Domestic Product (GDP). Things need first to be conceptualized before it becomes possible to act upon them (Hacking 1983; Miller and Rose 2008). For example, it is necessary to conceptualize inflation before assuming a position in which it can be controlled. Similarly, without knowledge about the relationship between the discount rate and money supply, central banks would not have had the power to act upon inflation. While scientific knowledge has created the necessary subjective categories for intervention and governance to be possible, the way we intervene depends on the state of that knowledge. When central bankers intervene in the market, they draw on knowledge about the object of their intervention (“know what”) as much as on the knowledge about the technique itself and the instruments that make the administration possible (“know how”). In that sense, representational knowledge (know what) and practical knowledge (know how) cannot be separated.

On the other hand, not only abstract scientific thinking plays a key role in governance but pragmatism also does. The institutionalization of knowledge into specific practices is mediated through pragmatic concerns. For example, central bankers need to solve problems—they need to act. It is not sufficient to acknowledge that “beliefs of the staff of any organization are linked to the beliefs that prevail within the profession(s) from which it recruits” since those beliefs are
susceptible to change in relation to the situations the practitioners have to face (Chwieroth 2010, 11). The knowledge that is institutionalized is the knowledge that provides the basis for “doing something.” Some scholars have provided examples of this rule of validation. For instance, Barnett and Finnemore have shown how the technique adopted by the IMF for calculating the balance of payments was not based on the model in vogue in the academic sphere, but rather on variables that give the IMF leverage to intervene, such as domestic economic stability (Barnett and Finnemore 2004, chapter 3). Similarly, Hannah Arendt, in an interview with Roger Errera for the French TV show A Certain Regard, gives the example of the domino theory, which was the official Cold War Pentagon policy from about 1950 to 1969 (Arendt 1973). As she says, although the people who put together this theory did not really believe in its accuracy, people at the Pentagon still followed the model because it provided a clear framework within which they could work and act.

Taking into Account the Capacity to Act. Underlying the act of governing, there is a collective delegation of authority that makes the very act of governing possible. Certain types of social agent have the capacity to act as long as there is a social acceptance of their authority or a coercive imposition of this authority. In IR theories, states have offered a taken-for-granted channel of justification for delegating such authority (coercive or not). Consequently, studies that investigate traditional states’ activities such as diplomacy or security rarely come back to the question of what has empowered state officials to act in world politics. However, the traditional justification of empowerment does not apply to governing bodies. Central banks, for instance, do not possess police forces to impose their authority or democratic processes to justify their governing authority. What is perceived as competent authority is historically situated. It depends on the perception of people involved at the time, rather than being based on an external benchmark.
In highlighting the importance of taking the capacity to govern into account, I echo Barnett and Duvall’s call to pay attention to power in global governance (Barnett and Duvall 2005a). As they argue, because global governance has been defined as the institutionalized coordination between different institutions, issues of power have been overlooked. “To understand how global outcomes are produced and how actors are differentially enabled and constrained requires a consideration of different forms of power in international politics” (Barnett and Duvall 2005a, 3). Instead of concentrating on a typology of power as they do, focusing on the capacity to act directly points out the nature of the social relations at play in global governance. Indeed, Barnett and Duvall’s taxonomy seeks more to “highlight the multiple and interconnected ways in which [power] operates,” than to analyze the relation between power and outcome (Barnett and Duvall 2005b, 57).

The notion of “the capacity to act” stems from the idea that power works in interrelations, a conception that contrasts with IR’s widely used notion of capability, which conceptualizes power as an attribute. Authority works in interrelations in the sense that it is made possible only with the complicity of both dominating and dominated social groups (Bourdieu 2001). As interactionist sociologists argue, relations of domination within the social domain partake in deeply integrated patterns of perception, which make people not necessarily aware of their hierarchical position. However, just because people are not consciously aware of patterns of domination doesn’t mean that they don’t exist. As Goffman, Bourdieu, and Elias point out, the configuration of authority works through the incorporation of our social roles at a symbolic level. More specifically, underlying relations of authority, there are 1) the internalization of the capacity to act by one group, and 2) the recognition of such authority by another group. The symbolic categories associated with the capacity to act are encompassed within the criteria of the authoritative figure’s competence and credibility. Both internalization and the recognition of authority
interrelate and form a symbolic organization of power. As Bourdieu argues, if one fails to play by the rules of an established symbolic order, it is very likely that such a person would be perceived as socially awkward or crazy (Bourdieu 2001). To illustrate the importance of following the symbolic structure of the social game, one can think of Poprishchin, the protagonist of Gogol’s short story “The Diary of a Madman” (2006), who wakes up one morning with the strong belief that he is the King of Spain. As strong as his belief is or even when he starts to act accordingly, he is not taken seriously. Because there is no social recognition of his self-proclaimed status, he is treated as a madman and put in an asylum.

Finally, pointing to the symbolic order that underlies the capacity to govern challenges the notion of performativity, which has recently gained scholarly interest in economic sociology and political economy (Callon 1998b; MacKenzie 2008; Mackenzie, Muniesa, and Siu 2007). Originally defined by the philosopher Austin, performativity refers to the act of “bringing a state of affairs into being” through illocutionary acts (Mackenzie, Muniesa, and Siu 2007, 3). In its original definition, performativity is processed through language. Similar to Searle’s notion of “speech act,” performativity underlies an intentionality that materializes when expressed, such as “I apologize” (Searle 1998). Callon and Mackenzie have used the notion of performativity to investigate the relation between economic models and market infrastructures. For example, Mackenzie’s studies point out the impact of the “market efficient hypothesis” formulated by Eugene Fama (1970) on the rise of derivative markets (MacKenzie 2008). The market efficient hypothesis—which stipulates that the price of a financial asset shows all of the information relative to such an asset—served as the main inspiration for index-tracking funds, which ultimately made the market act in accordance with the theory (Mackenzie, Muniesa, and Siu 2007, 4). To use Robert Merton’s formula, the efficient market hypothesis became a “self-

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6 An example of such a fund is SP500
fulfilling prophecy.” The problem with such theory is that while it can acknowledge a link between a model and the market, it abandons the social dimension that makes this model capable of having an impact. Indeed, any performative act is sanctioned through a symbolic order that is socially shared, which establishes a hierarchy about what and who has the possibility and capacity to influence reality.


“Governing practices” can be defined as a patterned way of managing reality; they are a privileged sphere of intervention, and involve a constant rationality about how this intervention must be performed. Consistent with the practice turn’s objective to develop rich empirical studies, the concept of governing practices helps to designate clear patterns of governance. In the domain of central banking and financial stability, I have identified three governing practices that have been performed over time: monetary-based, capital-flow-based, and standard-based governing practices.7

What are the conditions and mechanisms of change of different governing practices? There are two dimensions of practice I mentioned earlier: an epistemic and a cognitive one. While the epistemic dimension is the most integrated level of knowledge that makes reality appears as natural, the cognitive dimension refers to the knowledge situated at the back of social agents’ minds. These two dimensions are not mutually exclusive. The structure of reality of the first order is integrated within the mind of social agents as symbolic matrices through which emotions, decisions, and thoughts are formed (Bourdieu and Wacquant 1992). Social agents acquire these mental schemes through interactions with their environment and social reality. Therefore, change

7 For more details on central banks’ governing practices, see chapter 1.
in financial governing practices can result from transformations that occur at either the epistemic or cognitive level.

**Conditions for Change in Central Banks’ Governing Practice**

As a contingent view of history assumes, there is no absolute condition for change. Conditions of change depend on the epistemic foundation of a certain reality. Modern science has opened up the conditions of possibility for governance to happen, and this also applies to central banks. The conditions of change in central banks’ practices work in relation to the epistemic infrastructure that makes central banks’ governance of the financial market possible. Economic science has helped create an abstract representation of the economic domain upon which it is possible to intervene. Therefore, *changes in market representations are the necessary conditions for changes in central banks’ practices to occur*. More specifically, new market representations are formed through “scientization trends” in economics and finance.

The incorporation of science in our society has been a gradual process. In scientizing different domains of our existence, we remove their human specificity, which opens up the possibility of abstractly thinking about such a domain and technically intervening on it. As I explained earlier, the process of *scientization* can be broken down into interrelated dynamics: dis-embedment, rationalization, and problematization. In this way, I agree with Drori and Mayer who argue that scientization creates various scripts for looking at the world (Drori and Meyer 2006), but I offered a more fine-grained description of the process. I see scientization not only as a process of rationalization, but also as a process of disentanglement and problematization.

Scientization trends have had an impact on central banks’ governance since their adoption of a regulative role in finance markets, a transition that occurred in the mid-nineteenth century.
When it comes to scientization, I thus differ from Marcussen who sees the scientization of central banking as idiosyncratic in the current period. In fact, in drawing on the literature that analyzes the development of economics thinking, such as economic philosophy and sociology, as well as historical economy, I identify three major scientization trends in economics and financial thinking (Marcussen 2009). These trends have considerably altered the representation of economic and financial markets.

The first transformation involved the crystallization of positivist economic thinking. For example, the American Economic Association was created in 1885 and the Royal Economic Society in 1890 (Schumpeter 1983). However, in the mid-1850s, economics was not science in the modern sense of the term; ethical and philosophical considerations were employed along with mathematical language. No unified view of domestic markets existed yet. Economic rules were associated with tradition, and economic concepts were anchored in the material world. For example, the Palmer rule, used to determine bank rates, did not follow any scientific standards but followed a rule of thumb of 4 percent.

The second major transformation in economic thinking was the invention of macroeconomics, which accelerated the scientization of all of economics. According to Mirowski, macroeconomics emerged as a result of using physics’ imagination to represent the economy. The macroeconomic revolution presented a cognitive tool with which to think of the market differently (Mirowski 1989). Since then, economic markets have been perceived as a coherent system with its own set of rules. It has thus become possible to talk about the “economy of the US,” or the “economy of Canada”—conceptions that did not exist before (Mitchell 1998).

Finally, a third major transformation happened in the 1960s with the “scientization” of finance, which provided the tool to think of financial markets as a coherent system. Prior to the mid-1960s, the discipline of finance was what Richard Whitley called “business finance”
(Whitley 1986a; 1986b). Particularly in the United States, finance was taught in business schools, where “instructors did not generally seek to create new knowledge but rather concentrated on teaching current ‘best’ management practices” (Whitley 1986b, 149). Theorists such as Modigliani, Miller, Fama, and Markowitz made different propositions that reconceptualized the financial market with its own set of rules, working autonomously from other spheres.

The process of scientization created new conceptual categories that then organized reality differently when such representational structures became incorporated into practice. “‘Knowing’ an object in such a way that it can be governed is more than a purely speculative activity: it requires the invention of procedures of notion, ways of collecting and presenting statistics, the transportation of these to centres where calculations and judgements can be made, and so forth” (Miller and Rose 2008, 30). Knowledge at the epistemic level structurally transforms the conditions of possibility for certain practices to happen. Epistemic change through scientization makes new knowledge available to represent markets (know what), which also influences the way we perceive potential problems (know why), and instruments to manage them (know how). Therefore, when I refer to reality, I refer to the structure of knowledge between the “know what,” “know how,” and “know why,” which I argue work interdependently with each other. In this view, regulatory reforms are not conceived of as a mere change in the material environment since both the market and regulation are conceptualized to be embedded in the same structure of knowledge. As Marieke De Goede put it, “market and regulation are not forces pulling in opposite directions but are mutually constitutive and do not exist independently of each other” (2005, 2).
Mechanism of Change

New knowledge does not automatically change reality. To have an impact, knowledge has to be adopted by the community of practice. I thus argue that knowledge transforms central banks’ practices through the practice community of central bankers. Such an argument starts from the assumption that central bankers are part of the same practice community. Even though it has been argued that central bankers do not form an epistemic community, they do form a practice community (Kapstein 1992). Kapstein argues that central bankers do not form an epistemic community based on the observation that central bankers do not form a consensual group. However, unlike an epistemic community, a community of practice does not need to be consensual. Rather, it is mutual engagement that binds the members of the community of practice together, and as Wenger says, “what makes engagement in practice possible and productive is as much a matter of diversity as it is a matter of homogeneity” (Wenger 1998, 75). In that sense, it is possible to say that central bankers are mutually engaged in ensuring financial and monetary stability, and thus constitute a community of practice. Indeed, even though central bankers are a diverse group of people, they still share a sense of we-ness. In the words of Davis and Green,

Central bankers often congratulate each other at their frequent international gathering on how remarkably well they get on together by comparison with their finance ministry colleagues or even their friends in the supervisory world. They believe they think the same way and have the same reactions in the face of a rather hostile, uncomprehending non-central-banker world. There is a distinct sense of a central bankers’ club, bound together by a common psyche that seems to transcend differences in history, functions, degrees of independence, size, or importance. (Davies and Green 2010, 270)

The central bankers’ community of practice mediates how new representations of the market are incorporated into the practices of financial stabilization since at the ontological level, a community of practice is situated where structure and agent, as well as the symbolic and the material dimensions meet. As Adler sees them, “communities of practice are intersubjective
social structures that constitute the normative and epistemic ground for action, but they also are agents, made up of real people, who—working via network channels, across national or organizational lines, and in the halls of government—affect political, economic, and social events” (Adler 2008, 1999). Practice is therefore likely to change when new knowledge is cognitively incorporated within the community.

A new type of practice emerged when the repertoire of a community of practice’s actions was adjusted with the symbolic and objective structures that make such a community capable of acting. Practitioners institutionalize new practices as they make new expertise converge with their own cultural background along with the pragmatic constraints of reality. To track the reciprocal adaptation of identity shared by a community of practice and the symbolic perception of their political social role, it is useful to refer to the conceptual categories of competence and credibility—the characteristics that make someone eligible to be part of the practice community of central banker and what they can possibly do. New knowledge is institutionalized in practice as the essential “cultural logic” or “shared repertoir” of the community of practice changes—a transformation that is itself associated with the transformation of the competence and credibility attached to central bankers (Abbott 1988; Wenger 1998). The cultural configuration and reconfiguration of competence and credibility is a process that takes place both within and outside the community of central bankers.

On the one hand, competence is internally defined. It emerges from the aggregation of central bankers’ individual experiences and the internal negotiation around what constitutes a good central banker. Rules of competence also play an intermediary role within the new type of knowledge’s cognitive incorporation. Competence defines what sort of knowledge one should hold to be considered a legitimate part of a community of practice.
On the other hand, central bankers’ competence and credibility is defined in interactions with other types of social agents who are external to the community of central bankers. A social role is culturally delegated. These are not only central bankers who perceive themselves as being competent enough to intervene on the monetary and financial markets; this perception of competence is collectively sustained and shared.

4. Methodological Framework

My methodological framework is geared to analyzing the governance of central banks from a practice perspective. Such a framework aims to overcome the dichotomy between private and public authority and offers the methodological tools to analyze institutions in a “deinstitutionalized” fashion. To do so, I propose first to use “genealogy,” to recover the epistemic and representational historical shifts related to central banking and, second, “polymorphous engagement” to draw the social dynamics through which change is processed. But before addressing these two methods in detail, I map out the general characteristics of the methodology on which this research is based. By methodology I mean the framework of inquiry, which is aligned with a specific ontological and epistemological commitment (Hall 2003).

Methodological and Epistemological Considerations

My methodology’s analytical objective is to solve problems critically. More specifically, this thesis aims to account for the epistemic foundations of the large historical patterns of transformation and continuity in central banking, as well as to identify the condition and mechanisms of these transformations. Such a proposition implies that problem-solving theories and critical theories are not mutually exclusive. The distinction between these two types of
theory comes from Robert Cox who contrasts theory that “takes the world as it finds it” (problem-solving theories), and critical theory that “stands apart from the prevailing order of the world and asks how that order came about” (Cox 1986, 208). While “problem-solving projects” aim to resolve “problems” or “puzzles,” critical theorists tend to investigate the conditions of a certain context’s existence. Problem-solving and critical theories deal with different purposes and perspectives, though certain types of analysis can combine both types of theory. Indeed, problems and contexts work hand in hand; what appears puzzling or interesting to study are context specific. This research’s analytical objective (solving problems critically) implies a minimal foundationalism that “accepts that a cautious, contingent universalism is possible and necessary in both ethical and explicatory field” (Rengger and Hoffman 1992, 133). In contrast to positivism, minimal foundationalism refuses an absolute neutrality and universality to knowledge; knowledge is partial because it creates categories of inclusion and exclusion, and contingent because the production of knowledge relates to a specific historical and sociological context. Theory making and generalization are still possible when the researcher becomes self aware of these characteristics of knowledge. In drawing the epistemic foundation of a certain reality, it becomes possible to understand the specificity of the reality we are working from. Such a reality influences not only the empirical objects we are dealing with, but also the questions that appear salient to study.

**Genealogy**

Genealogy is the best approach to grasp historical contingences. Developed by Nietzsche and Foucault, genealogy is now a methodological approach that is commonly used in the IR discipline (Foucault 1977a; 1977b; Nietzsche 1967; Vucetic 2011). It has been applied to subjects ranging from the concept of sovereignty (Bartelson 1995) and the chemical weapon taboo (Price
1997) to German post-war reconstruction (Jackson 2006) and the debtor-creditor relationship (De Goede 2005). Genealogy does not pretend to uncover a logically continuous passage of events. Rather, it aims to “identify the accidents, the minute deviations—or conversely, the complete reversals—the errors, the false appraisal, and the empirical world to find the faulty calculations that gave birth to those things that continue to exist and have value for us” (Foucault 1977b, 146). Therefore, while looking at history, genealogy’s main interest remains the present. “A genealogy is not a history of the past, […] whereas genealogy is a history of the present in terms of the past” (Bartelson 1995, 8).

For the genealogical approach there is no such thing as one history because history is a multidimensional process. What appear natural to us in the present correspond to a certain blockage of this process in the past. As explained above, the idea of “Canadian economy” is a product of the interwar period and has never been challenged ever since. A genealogy travels across different sites and finds a disjuncture in the past that makes present phenomenon intelligible. Genealogy is thus “how the present became logically possible” (Bartelson 1995, 8). Richard Price has named such transitioning points “defining moments” (Price 1997). The identification of defining moments is an inductive process. Practices do not exist in theory; they are an empirical reality. I identify three major defining moments in central banks’ governing practices. The most “defining” one corresponds to the transition point when central banks’ practices changed from making them a “bank among other banks” to making them become “the bank of banks.” This moment established the epistemic foundations from which stem central banks’ legitimacy to act as regulative bodies. It corresponds to the moment when positive thinking started to constitute the intellectual basis on which governors would base their behaviour. Previously, central bankers’ actions stemmed from tradition.
As for the second and the third defining moments, they are not a complete rupture from the first one but are in fact contained within this transition. The second defining moments happened in the 1930s and the 1950s when central banks started to directly control the expansion of financial markets. And the third defining moment corresponds to the decade between 1985 and 1995 when central banks turned toward prudential regulation. In each of these defining moments, my objective is to understand how new knowledge transforms the configuration of central bankers’ community of practice and the practice of stabilization thereafter. For the first defining moment, my focus is on the Banks of England and France because they constitute the most influential banks of the mid-nineteenth century. For the second defining moment, I then expand the focus to the Federal Reserve, which joined the Bank de France and the Bank of England as key institutions of the post-Second World War governance of capital flows. Finally, for the third defining moment, in addition to the national central banks already mentioned, I look at the Basel Committee on Banking Supervision (BCBS)—a key institution in central banks’ coordination, as well as the Bank of England and the Federal Reserve.

Polymorphous Engagement and Data Collection

Instead of looking at institutional and bureaucratic changes, I focus on change in central banks’ practices as well as the transformations in representation and the social interactions that are associated with them. Therefore, this research deals with three types of data: 1) the central banks’ policies and actions regarding financial stability; 2) the representations of markets behind such actions; and 3) the perception of central bankers’ role within financial stability. The ideal way of collecting such data would have been to observe central bankers in action in various contexts while asking them about their world views and the rationales behind the different positions they take. But such a data collection process is practically not possible. In tracing the
evolution of central banks’ practice, my study is not confined to a single central bank. Moreover, getting access to central bankers and high-ranking central bank officials is not easy. As members of the international financial elite, high-ranking central bank officials have a very busy schedule. They regularly have to attend meetings abroad in the various international institutions that aim to coordinate central banks’ practices, such as the Financial Stability Board (FSB). To overcome this challenge, I adopt a “polymorphous engagement” (Gusterson 1997).

Polymorphous engagement was first proposed by the anthropologist Hugh Gusterson as a pragmatic answer to the problem of accessibility in fieldwork (1997, 101). Because he was studying nuclear laboratories, Gusterson faced the problem of being unable to do participant observation—the traditional method used by anthropologists. Nuclear laboratories deal with very secret research projects and thus limit access to them.

Polymorphous engagement means interacting with informants across a number of dispersed sites; not just in local community, and sometimes in virtual form; and it means collecting data eclectically from a disparate array of sources in many different ways … Polymorphous engagement also involved an eclectic mix of other research techniques: formal interviews of the kind often done by journalists and political scientists; extensive reading of newspapers and official documents, and careful attention to popular culture, for example. (Gusterson 1997, 116)

In a nutshell, polymorphous engagement consists of “exploring and combining multiple sites and techniques of fieldwork” (Ho 2009, 18). For this research, I use three different sites of data collection: primary sources, secondary sources, and interviews. My three types of primary sources include central banks’ official reports, banks minutes, and national debates around central banks’ institutional changes. Some of these documents were obtained through the archives in the Bank de France and the Bank of England, or on central banks’ websites. The secondary sources involved: 1) literature on the history of central banks, 2) literature on the history of economic
thinking, and 3) journalistic books on central banks. Finally, I also collected data through open-ended interviews with central bank officials who were involved in financial stabilization, as well as market regulators. The interviews were conducted in Paris, Frankfurt, Basel, London, and Copenhagen.

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8 An important body of journalist work on the financial world aims to tell the “human story” behind markets. Despite the journalist character of those books, they usually contain full biographic data on the real human characters in the stories. See, for example, Ahamed 2009.
CHAPTER 3

THE EPISTEMIC FOUNDATIONS OF CENTRAL BANKS’ GOVERNING AUTHORITY

The introduction of the precious metals for the purposes of money may with truth be considered as one of the most important steps toward the improvement of commerce and the art of civilised life; but it is not less true that with the advancement of knowledge and science we discover that it would be another improvement to banish them again from the employment to which, during a less-enlightened period, they had been so advantageously applied. —David Ricardo, 1816

I believe that our system, though curious and peculiar, may be worked safely; but if we wish so to work it, we must study it. We must think we have an easy task when we have a difficult task, or that we are living in a natural state when we are living in an artificial one. Money will not manage itself, and Lombard street has a great deal of money to manage. —Walter Bagehot, 1873

This chapter investigates the historical transitional period when early central banks became supervisory institutions in financial markets. Originally organized as regular commercial banks, early central banks were gradually assigned a supervisory position over the banking sector, and became an essential component of monetary and financial governance at the end of the nineteenth century. More specifically, in the second half of the nineteenth century, central banks transitioned from being “banks among other banks” to being the “bank of banks” in both England and France. Unlike economists who have conceptualized this historical transition as being natural and continuous, I approach central banks’ transition toward regulative institutions as being contingent. The defining moment of transition was a time when meanings were not fixed and legitimacy was in the process of being defined. Focusing on the historical moment when central
banks adopted a supervisory role in financial markets lets me analyze the epistemic dimension of central banks’ governing authority. Therefore, the chapter addresses the crucial role of rational knowledge in the emergence of central banking as an institution of governance. It challenges material-oriented explanations that perceive central banks’ endorsement of a supervisory role as involving a process of adaptation to material change in the economic environment or a natural evolution of their original constitutions. In contrast, I propose that both the material economic environment and governance are embedded in larger structures of knowledge. That is, governance and market are not independent from each other but mutually constituted.

As I argued earlier, going back to the epistemic dimension means returning to the fundamentals of what it means to govern—the most deeply integrated knowledge that created the conditions of possibility for governance to happen is then reproduced through the daily performance of governance. An analysis at the epistemic level helps us to understand the specificity of central banks’ authority, and thus allows us to assess the legitimacy of the institution in relation to the content of its authority. In other words, the epistemic dimension of authority questions the type of authority that makes central banks capable of acting on financial markets. I argue that central banks became supervisory institutions through the rationalization of their position within the economic and financial environment. Through that rationalization, central banks’ legitimate authority crystallized around rational and hybrid principles: rational in the sense that central banks came to be perceived as being able to perform technical expertise, and hybrid in that their authority was both private and public. Central banks could perform “discretionary” actions in addition to pursuing a state’s request.

This chapter looks at the Banque de France and the Bank of England, which represent key cases to understand nineteenth century central banking for two reasons. First, Paris and London were the most important international financial centres. Second, the Bank of England and the
Banque de France are the oldest central banks, founded in 1694 and 1803 respectively, with the exception of the Sverige Riskbank created in 1668. They thus constitute vanguard institutions to set international central banking practice. The analysis of the chapter draws on archival sources from the two banks. The renewal of the bank’s note-issuing privilege in France and the bank’s charter in England as well as governmental inquiry commissions provide rich empirical material to investigate the epistemic dimension of central banks’ authority. In all these contexts not only was the authority of central banks debated, but their *raison d’être* was also questioned. At the turn of the century, a consensus crystallized about the specific nature of central banks. To that effect, the chapter also examines the case of the 1908 National Monetary Commission in the United States, which preceded the foundation of the Federal Reserve in 1913. The National Monetary Commission proceeded to an extensive study of European central banks and thus constitutes an earmark event for the diffusion of central banking practice.

1. Central Banks’ Institutional Transition in England and France: From a “Bank Among Other Banks” to “the Bank of Banks”

When one aims to understand the origin of central banks’ governing authority in financial markets, looking at the history of the institution can be misleading because, originally, central banks were very different from what we consider a central bank today—an institution at the centre of a national banking system that manages the currency and ensures the well-being of the system. The first central bank to be institutionalized was the Swedish Riksbank in 1668 followed by the Bank of England in 1696. However, as Bowen explains, “the Bank [of England] had neither been established, nor consciously developed, with central banking functions in mind” (1995, 1). Central banks were first organized as profit-seeking institutions like any other banks.
They had a privileged relationship with the state in the sense that they were the banker of the state, but they did not have any authority over the banking system.

When the first central banks were founded in Europe, there was, however, little or no consideration, or attention, given to the possibility of these banks playing a supervisory role in relation to other banks. Instead, the initial impetus was much more basic, generally relating to the financial advantages that government felt that they could obtain from the supports of such a bank, whether a state bank, as in the case of the Prussian State Bank, or a private bank, e.g., the Bank of England. (Goodhart 1988, 4)

In fact, the idea of centralized management of money and regulation arose only in the nineteenth century. The first coherent theory of modern central banking was articulated in 1807 by Henry Thornton in his book *An Inquiry into the Nature and Effects of the Paper Credit of Great Britain* (Thornton 1807). In France and England, the transition of central banks into a regulatory entity occurred both formally through the negotiation of legislative acts, and informally by the transformation of the banks’ perception of their position vis-à-vis the rest of the banking sector. More specifically, central banks became *central* through two important landmarks. First, they obtained the monopoly over the note-issuing process. In England, this privilege was provided to the Bank of England with the adoption of the Bank Charter Act in 1844. In France, the bank obtained a *de facto* monopoly over note issue in 1848 when the departmental banks were incorporated into the Banque de France after a liquidity crisis in 1875 (Redish 1993). Obtaining control over the note-issuing process was a crucial step for central banks to exercise a regulatory role because it gave them the power to control the national domestic credit context and opened the door to pursue a coherent national monetary policy vis-à-vis other countries.

The second landmark leading to the central banks’ regulatory role was their endorsement as the lenders of last resort—a function that consists in providing credit to the system in time of liquidity crises. “The role of lender-of-last-resort can be said to appear when the institution
accepts a responsibility for the stability of the banking system as a whole, which should override any (residual) concern with its own private profitability” (Capie 1998, 314). Capie considers that the Bank of England and the Banque de France definitely achieved lender-of-last-resort status respectively in the 1870s and 1880s—when “commercial business continued, but was not significant” (Capie 1998, 320). It can also be said that the banks acted as lenders of last resort at the international level because the Banque de France and the Bank of England provided emergency loans several times to each other. The endorsement of the function of last resort was an important step in placing the central banks in a regulatory position because it signalled the banks’ willingness to prioritize the stability of the system over their own profit-making activities. One has to remember that, at the time, central banks were still involved in commercial activities, which could place them in a conflict situation when competitors threatened to default.

The year 1873 has commonly been considered as the official date symbolizing the dawn of modern central banking for three reasons. First, it marks the beginning of the gold standard regime. Second, it “was the beginning of a long deflation that lasted until the mid-1890s” (Capie, Goodhart, and Schnadt 1994, 10). And finally in that same year, Walter Bagehot published Lombard Street, a very influential book, which expounded the main principles of modern central banking (Capie, Goodhart, and Schnadt 1994, 10). From this moment on, central banks expressed their regulatory function at both a micro and macro level. At the micro level, the central bank ensured “the health and well being of the (individual) members of the banking system” while at the macro level it aimed to ensure a stable economic context (Goodhart 1988, 5).

1“For example, a gold loan by the Bank de France to the Bank of England during the Baring crisis of 1890, or the discounting of English bills by the Bank de France in 1906, 1907, 1909, and 1910, thereby relieving pressure on the gold reserves of the Bank of England” (Bloomfield 1959, 56).
3. Transition in Central Banking: Discontinuity Rather than Continuity

On their way to “central” banking, central banks experienced an institutional transition that placed them above the banking system. Originally established as profit-seeking institutions, central banks obtained a supervisory position at the centre of the banking system. For economists, this historical transition was natural and continuous. As the preeminent specialist on central banks, Charles Goodhart argued that “the adoption of this regulatory and supervisory role was, at least for those central banks founded in the nineteenth century, largely a natural and evolutionary development” (Goodhart 1988, 8, emphasis added). Such economic explanations of central banks’ shift to modern central banking hinge on a supply-demand explanation of change that narrowly focuses on the institutional material reality and fails to understand the specific character of central bank authority.

While all economists agree that central banks’ endorsement of a supervisory function was a natural one, they diverge on the question of whether this natural evolution is “endogenous” to the institution or “exogenous.” The various theories in the “endogenous school” commonly perceive the historical shift to modern central banking as being rooted in the original design of the institution (Bagehot 1873; Broz 1998; Morgan 1965). According to this school of thought, central banks’ special relationship with the executive governments privileged the banks over their competitors and naturally evolved into a position of monopoly. “The evolutionary consequence of granting privileges to a single bank also follows the predicted pattern. With such important monopoly rights—and the incentive to employ them to undermine competitors—special banks rose more or less steadily to a position of hegemony in their respective financial systems” (Broz 1998, 242). Bagehot had a similar vision: “with so many advantages over all competitors, it is quite natural that the Bank of England should have far outstripped them all. Inevitably it became
the bank in London: all the other bankers grouped themselves around it, and lodged their reserve with it” (Bagehot 1873, 100, emphasis original).

From an economic perspective, however, the idea of being preprogrammed is fallacious. The economic theory of monopoly has proved that a privileged position is not a sufficient condition for obtaining a position of monopoly in the long run. As John Wood asserts, “the theory of monopoly shows [that] it is not obvious that a company with privilege will survive” (J. Wood 2005, 33). As such, some economists under the banner of the exogenous school are opposed to an endogenous explanation of change—the idea that central banks were intrinsically “programmed” to take a regulatory function. They instead argue that institutional change was driven by a process of adaptation to change in the global economy (Giannini 2011; Goodhart 1988). On the one hand, Goodhart considers that this natural evolution was driven by an information problem concerning the soundness of banks’ capital (Goodhart 1988). As the banking system got more complex and impersonal, it became harder for depositors to know whether their money would be safely kept. Individuals, unlike shareholders, had no information about whether or not banks were well managed. No checks-and-balances system was in place, and information asymmetries created unstable contexts. The central banks thus naturally took on a supervisory role over the banking system to overcome this institutional failure. The commercial banks accepted central bank authority because they collectively benefitted from a stable system.

On the other hand, Giannini argues that the key driving mechanism was not an information problem, but rather a problem of trust, which underlies any monetary transaction (Giannini 2011). As he explains, “from this standpoint, the evolution of central banking is merely one aspect of the institutional adaptation set in motion by the development of payment technologies; as they became increasingly abstract and hence easier to manipulate, they made it more and more
difficult to preserve the value of the outstanding stocks of money over a period of time” (Giannini 2011, xxv).

Economists have made important contributions to the study of central banks’ role in financial stability. However, their theoretical explanation of change in central banking reveals some shortcomings. First, it remains very deterministic. In conceptualizing institutional change as a natural adaptation to transformations in the economic environment, they move the deterministic element from the endogenous institutional setting to the exogenous movement of the economic environment. To use the parlance of economics, Goodhart and Giannini theorize institutional transformation as a supply to a demand for reform stemming from economic disturbances. This problem-demand vision falls short on both the demand side and the supply side of the equation. It fails to problematize demand. Problems are processes; what constitutes the legitimate problem to resolve is an object of social and normative struggle. The “supply” side of the equation is also taken for granted. Economists acknowledge various possibilities for one problem, but assume that the option that would be privileged is the most “efficient” (Goodhart 1988) or “effective” (Giannini 2011) institution. The problem with this view is that efficiency and effectiveness are empty concepts that can be associated with a variety of things (Stein 2002). There is no “absolute” criterion of efficiency and effectiveness. What appear to be efficient and effective are socially constructed; they are based on a certain perception of what is possible and desirable. Consequently, demand and supply do not exist independently of each other—they are embedded in larger representations of what is or is not possible.

To understand how “supply” and “demand” are connected, I suggest going back to the epistemic level, which defines the reality in which this institutional change occurred. As I explained in chapter 1, the epistemic dimension “provides the fundamental categories in which thinking [and acting] take place. It establishes the limits of discussion and defines the range of
problem that can be addressed” (Wuthnow qtd. in Adler and Bernstein 2010, 297). Therefore, understanding central banks’ institutional change within the context of larger epistemic change implies that the mid-nineteenth century’s change is more much profound than subsequent changes: it established the condition of possibility for central banks to become a supervisory institution, a position they have maintained since then.

In drawing attention to the epistemic context, the core argument of this chapter steps away from economic explanations in two crucial ways. First, the idea of natural evolution is rejected. Indeed, going back to the epistemic dimension starts with the premise that “things could have been otherwise.” History is not linear, but contingent. Second and related, where the economic discipline sees continuity in central banks’ changing role, I see discontinuity—a singular event where a specific set of rules was established. In the course of this historical transition, intersubjective expectations regarding central banks’ actions were drastically transformed. While there is now a widespread consensus that central banks constitute legitimate actors to supervise financial markets, in the nineteenth century this was far from being the case. Up until the end of the century, central banks were contested authorities.

3. Analyzing the Special Nature of Central Banks’ Authority

The economic explanations of central banks’ transition into supervisory entities focus almost exclusively on the material dimension of institutions; they ignore the substantive context out of which central banks could transform the way they did. Economic explanations thus remain at the surface, and do not address the historical specificity underlying institutional change. Had they gone deeper, economists might have noticed that central banks’ passage from being a “bank among other banks” to the “bank of banks” goes all the way down to the epistemic connection
between authority and economy. Indeed, central banks were granted supervisory and regulatory functions when a will arose to actively intervene in the economy. In a nutshell, the rise of central banking occurred amid larger epistemic transformations, namely the creation of a problem of governance in the economic sphere.²

Investigating the epistemic dimension of authority goes beyond the concept of legitimacy, which is typically put forward by IR scholars who aim to tackle the substantive dimension of institutional authority.³ Referred to as “the entitlement to control” (Reus-Smit 2007, 158), or as the motivation to “follow the rule” (Hurd 1999), legitimacy remains at the cognitive level of the practice of authority. According to Reus-Smit:

Legitimacy is a social concept in the deepest sense—it describes a phenomenon that is inherently social. As soon as we say that an actor has a “right” to act, “right” to rule, or a “right” to govern, we are saying more than they have the capacity to do so. Rights are socially ordained, and an actor has a right to act, rule, or govern only if it is socially sanctioned. Similarly, when we say that an institution is rightful, and hence legitimate, we are saying that its norms, rules, and principles are socially endorsed. (Reus-Smit 2007, 159)

While the concept of legitimacy raises questions about the sources of authority, it does not question its content. In other words, the concept of legitimacy separates the question of authority from the nature of its practice. Legitimacy is constructed amid a broader epistemic context that defines what governance is possible. As Berger and Luckman see it, “legitimation as a process is best described as a ‘second-order’ objectification of meanings” (Berger and Luckmann 1966, 85).

As for the epistemic dimension, it refers to the first order of meaning: it interrogates the fundamental categories that constitute reality as it is. Legitimacy is not only socially constructed but also historically situated. As McNamara says, “the terms by which political legitimacy is established vary with historical context” (2015, 5). Taking into account the epistemic dimension

² See chapter 2.
of authority allows us not only to question why central banks can act in international markets but also how they do so. In that sense, the epistemic dimension leads to interrogating the fundamental nature of central banks’ authority that has crystallized through the governmentalization of the financial sphere.

To understand the specific nature of the authority that is now characterizing central banks, it is necessary to contrast such a conceptual position with its alternatives. In that sense, the historical process underlying central banks’ adoption of a supervisory role over the financial system represents a moment when different perceptions of central banks’ authority were confronting one another. During that time, the very existence of central banks was contested, and the nature of central bank authority was still being negotiated.

In both France and England, central banks were first thought of as temporary institutions. The Bank of England then remained in place by regularly negotiating the extension of its charter over the next hundred years. Between the first round of negotiations in 1697 and the last one, which resulted in the Bank Charter of 1844, the bank negotiated with the government to extend its charter seven times: in 1708, 1713, 1742, 1764, 1781, 1800, and 1833 (J. Wood 2005, 38–40).

The Bank’s charters were contracts in the ordinary sense of explicit agreements between parties, each with something to offer and expecting performance from their counterparties. Governments wanted cheap, reliable credit, which they came to believe depended on a bank whose size and soundness were unthreatened by competition, and the Bank’s stockholders desired a good return on their investment. (J. Wood 2005, 41)

When the Banque de France was first institutionalized in 1803, the government granted the privilege of note issuing to the bank for a period of thirteen years. The only exception was the provincial banks: they could also issue their own notes. This temporary contract obliged the bank to regularly renegotiate the terms of its privilege. The note-issuing privilege was changed to twenty-five years in 1806. Then in 1840, the bank again received its note-issuing privilege until
1867 (Leclercq 2010; Redon and Besnard 1991). On 31 December 1873, a law was passed to establish a branch of the Banque de France in every French department, which then led the bank to obtain a real monopoly over note issue (Breton and Lutfalla 1991). Negotiations over the renewal of this privilege opened again in 1891 and closed in 1897 when the bank had its privilege secured until 1920.

In both countries, the very existence of the central banks remained the subject of political debate for more than the first half the nineteenth century. Many criticized the banks’ note-issuing privilege. For example, in France, the bank had to strategize about the best time to open negotiations with the government for its note-issuing privilege. As a report by the bank’s auditors stated in 1803:

The Bank, attacked fiercely by the majority of newspapers, has a multitude of enemies allied against it who are denigrating the bank with envy; it is thus not possible to affirm that the present moment is the best one possible to ask for the renewal of the privilege. Occasions when the Bank could give new big favours to the treasury, if they occur, would provide better chances of success.4

Similarly, in a report written in 1840, the bank’s deputy governors judged that the moment was appropriate to ask for the renewal of their privilege.5 According to Leclercq, the controversies regarding the Banque de France culminated in the 1860s when the Pereire brothers— influential bankers—aimed to break the monopoly of the Banque de France (2010, 180). The Pereire brothers were highly critical of the ease with which the bank could manipulate the discount rate and eventually destabilize the credit environment (Flandreau 1996, 885).

4 “La Banque, attaquée avec acharnement par la majorité des journaux à une multitude d’ennemis conjurés contre elle qui la dénigrent à l’envi: on ne peu donc affirmer que le moment de demander le renouvellement du privilège soit le meilleur possible. L’occasion de rendre de nouveau quelque grands services au trésor, si elle le présentait, offrirait peut-être plus de chances de succès” (Banque de France Archives, Journu-Aubert, “Rapport des censeurs de la Banque de France à l’assemblée générale des actionnaires,” Le 25 vendémiaire an XII, 14, my translation).

5 Banque de France Archives, “Commission spéciale pour le renouvellement du privilège: Procès-verbal de la 1ère séance,” 22 Février 1840.
In England, the bank was also strongly criticized. The country experienced many monetary and financial crises that led to inquiry commissions, during which the role of the Bank of England was scrutinized. The first such inquiry was the Bullion Committee in 1810, which was created to study the return to gold convertibility. Cash payment had been suspended in 1797 in the context of the Napoleonic Wars. Subsequently, the format of the Bullion Committee was reproduced many times.

Since that time there have been twenty-one major enquiries into various aspects of the monetary and banking system, not counting several technical ones of the state of the coinage and on decimal currency (the first of these as long ago as 1857) and many concerned with industry, trade, or agriculture in which some reference was made to monetary matters … The Lords investigated the circulation of bank notes of less than £5 (1826-7) and the Commons enquired into the renewal of the Bank of England Charter (1831-2), joint stock bank (1836-8), and banks of issue (1840-1), while both houses appointed committees on each of the great commercial crises of 1848 and 1857. (Croome and Johnson 1970, 3)

During these different inquiry commissions, it was not only the central bank’s function that was debated, but also its very existence. For example, the Chancellor of the Exchequer, Francis Thornhill Baring, made the following comments in the House of Commons in 1840 when he created a committee of inquiry on the bank:

The question to which their attention ought to be specially called was as to the existence of a bank having any particular privileges—whether the existence of the bank was right and proper—whether it would not be more advisable to introduce the system called free banking; whether, if they conceded that a bank ought to exist, sufficient powers had been given to it to perform those functions which they expected a bank to perform. And then again there was the question, whether it were advisable at the present moment to reconstruct the whole system and have but one bank of issues. (Qtd. in J. Wood 2005, 77–78)

The transition toward central banks was far from being natural and it happened with much controversy. The inquiry commissions as well as the renewal of charters and privileges created a space for discussion about the legitimate authority of the central banks, and it is within such a
space that central banks’ authority as supervisory institutions gradually crystallized, but only after the very existence of central banks was contested.

4. The Rationalization of Central Banks’ Authority

During the nineteenth century, central banks experienced major transformations in the nature of their social function and the extent of their practice. Toward the end of the nineteenth century, central banks adopted a regulatory position within economic and financial markets that were experiencing the rationalization of the economic environment and the position of the bank within it. The role of the institution and the purpose of its practice were objectified, a process by which an interpersonal type of authority came to be substituted for an impersonal one. The central banks’ endorsement in the lender-of last-resort function by the crystallized this epistemic connection between the bank as a supervisory institution and rational thinking. Indeed, the institution’s endorsement as the lender of last resort signalled not only that the institution prioritized the stability of the banking system as a whole over its own profit, but also that the central bank was capable of conceiving banking as a coherent system, and that it understood its own role within that system. While this rationalization of central banks’ authority occurred simulataneously in France and England, the process took different forms in each country. In France, rationalization occurred through the negotiations over the central bank’s authority between the bank and the government; in England, such negotiations also involved economic specialists.
France

In 1803, the legislators had an interpersonal understanding of the Banque de France’s authority—the bank was depicted through subjective terms. This interpersonal understanding was visible in how the legislators conceptualized the credibility and competence of the bank and in how the bank considered its relations with the external environment. Almost from the beginning, aside from its capacity to provide benefits to its shareholders, the bank’s credibility relied on “the public trust in the banknotes that the Bank put in circulation.”6 Its capacity was conceptualized at that time as depending on its ethics and its administrators. For example, the legislator considered that people’s trust in banknotes was guaranteed by the “wisdom of the bank’s rules” and the “integrity of the bank’s administrators.”7 Similarly, bad banking was perceived as being the result of human weakness. The comments about the bad performance of the Caisse d’escompte (the predecessor of the Banque de France) is a good case in point: “the vices in its constitution and the weakness of an administration that gave itself over to the seductions of an indebted government rapidly impaired its credit.”8 The interpersonal nature of central banks’ authority was also mirrored in the way the legislators depicted how the bank was connected with the outside world. The bank’s role was characterized in social terms, and its authority was understood as being interconnected with different social figures. During the debates, the bank’s responsibility toward the “banknote holder” was a recurrent theme, for example. Another example is the characterization of the bank’s role with respect to the household. The words of the auditors at the

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6 “Le crédit de la banque consiste dans la confiance que contracte le public envers les billets qu’elle répand dans la circulation” see Banque de France Archives, Corps Législatif (Séance du 4 avril 1803, my translation).
7 “La sagesse de ses règlement” and “l’intégrité de ses administrateurs” (Banque de France Archives, Corps Législatif, Séance du 4 avril 1803, my translation).
8 “Les vices de sa constitution et la faiblesses d’une administration qui s’abandonna aux séductions d’un Gouvernement obéré, altèrent rapidement son crédit” (Banque de France Archives, Corps Législatif, Séance du 4 avril 1803, my translation).

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1803 shareholders’ general assembly provide a good illustration of that. In their report on the bank’s performance, they praised the bank’s secure investments for being beneficial to the “father of the family.”

[The shares] will be a safe port against the storms that are likely to rage over credit. The father of the family, a stranger to the movement of commerce, obliged to safeguard free funds for the insecure moments in establishing his children—would he not be very happy to have a secure investment that can produce with considerable interest, while increasing capital as his family grows, but without ceasing to be available at his will?9

The mid-nineteenth century was a mid-point between the characterization of central banks’ authority in an interpersonal and an objective way. In 1840, when the bank received the renewal of its note-issuing privilege for the second time, authority was still understood interpersonally although this personalization was gradually being detached from the bank. In a discussion about how the bank could ensure confidence in the bank note, a deputy made the comment that “the Bank cannot replace the wisdom and loyalty of the industry, but gives a certificate to the ones that deserve it.”10 Therefore, the intimate and personal connection between the citizen and the bank is slowly being replaced by a connection that is mediated by the industry.

By the end of the nineteenth century, the interpersonal way of characterizing the connection between the bank and the outside world gave way to an impersonal one. During the discussions that preceded the renewal of the bank’s note-issuing privilege in 1897, the authority of the Banque de France was characterized in a rational fashion. The vocabulary referring to social

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9 “Ce sera un port assuré contre les orages qui agitent inopinément le crédit de la place. Le père de famille, étranger au mouvement des affaires, obligé de conserver des fonds libres pour le moment incertain de l’établissement de ses enfants, ne sera-t-il pas très-heureux d’un placement aussi sûr, produisant, et un intérêt considérable, et une augmentation de capital croissant comme sa famille, sans cependant cesser d’être disponible à sa volonté?” (Rapport des censeurs de la Banque de France à l’assemblée générale des actionnaires,” Banque de France Archives, Journu-Aubert, “Rapport des censeurs de la Banque de France à l’assemblée générale des actionnaires,” 25 vendémiaire an XII, 7, my translation).

10 Banque de France Archives, Chambre des Pairs, Séance du 22 juin 1840.
figures, such as “banknote holders” or the “father of the family” had disappeared. The bank’s connection to the outside world was not perceived in personal but in material terms. For example, Senator Antonin Dubost considered that “[the banks are] the necessary intermediaries between capital that looks to be invested and labour that looks for capital.”

The discourses around the central banks were much more abstract. As Georges Cochery, the Minister of Finance, commented at the House of Assembly on 3 June 1897, “what is dividing our opponents and us is not only the question whether the Banque de France must be a state bank or a private bank, but it is also the very conception of the role that a Bank of issue has to fulfill.”

Whereas in 1803 and in 1840 (to a lesser extent), the role of the central banks was discussed in relation to a concrete material and sociological reality, such as ensuring trust in money or protecting the role of the banknote holder, in 1897 the role of central banks was characterized in a more abstract way. The central bank was then understood as being connected to a coherent conceptualization of a national banking system, and from this conception stems the idea of the lender of last resort.

In 1897, the discussion about the lender of last resort underlay rational conceptualizations of the national banking system as well as the role of the bank within it. This was the case during a debate between M. Pelletant and Minister of Finance George Cochery over the appropriate role of the Banque de France. M. Pelletant wanted the bank to be more active in the real economy. He accused the bank of not investing enough in commercial activities and argued that the bank’s

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11 “C’est le rôle des banques de crédit ou l’escompte, intermédiaire obliges entre le capital qui cherche un placement, et le travail qui cherche un capital” (Banque de France Archives, Antonin Dubost, “Rapport fait au nom de la Commission charge d’examiner le projet de loi adopté par la Chambre des députés, portant prorogation du privilège de la Banque de France,” Session extraordinaire du 22 octobre 1897, 3, my translation).
12 “Ce qui nous divise, nos adversaires et nous, ce n’est pas seulement la question de savoir si la Banque de France doit être une banque d’État ou une banque privée, c’est la conception même du rôle que doit remplir une banque d’émission” (Banque de France Archives, Chambre des députés, Séance du 3 juin 1897, my translation, emphasis added).
13 Banque de France Archives, Chambre des députés, Séance du 3 juin 1897.
portfolio was not large enough, considering its cash balance. The minister of finance answered Pelletant’s criticisms by pointing out that, to the contrary, its large cash balance was what made the Banque de France unique. Because of its superior cash balance, the bank could help the whole commercial and banking sectors in time of crises. “[Regular] banks are exposed to sudden cash withdrawal; they are also exposed to the danger of public nervousness, and it is thus essential that behind the banks, there is one institution with widespread credit and trust, which does not face the same risk as other banks.” In the same parliamentary session, the Banque de France had specifically been characterized as the “effective organ of surveillance and control of the national monetary circulation and international capital movement.”

**England**

In England, the rationalization of the bank’s authority occurred during discussions about whether or not the Bank of England was a bank like any other bank. Many of those discussions started in the various inquiry commissions that had been set up throughout the century. The different inquiry commissions offered a privileged platform for such reflections. In the context of these commissions, different controversies arose regarding the nature of the Bank of England’s authority, such as whether the bank’s note-issuing privilege in the London region affected the national monetary context. In fact, the Bank of England’s role was already at the centre of the first inquiry commission’s discussions —the Bullion Committee—which had been established in 1810 to study the recent increase in the price of gold (De Boyer 1992). In their reports, the

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14 “Ces banques sont exposées à des retrait brusques; elles sont exposées aussi aux danger de la nervosité du public, et il est indispensable que derrière elles se trouve, comme réserve, un vaste établissement qui par l’étendue et la solidité de son crédit et la confiance qu’il inspire n’a pas à courir le même risqué” (Banque de France Archives, Chambre des députés, séance du 3 juin 1897, my translation).

15 “Banque des Banquiers” et “l’organe effective de surveillance et de contrôle de notre circulation monétaire et des mouvements internationaux de capitaux.” (Banque de France Archives, Chambre des députés, séance du 3 juin 1897, my translation).
committee members, which included David Ricardo and Henry Thornton, reached the conclusion that the Bank of England was directly responsible for the increase in the price of bullion. They blamed the bank for having issued too many banknotes.

Upon a review of all the facts and reasoning which have been submitted to the considerations of our Committee in the course of their inquiry, they have formed an opinion, which they submit to the House: that there is at present an excess in the paper circulation of this country, of which the most unequivocal symptom is the very high price of Bullion, and next to that, the low state of the Continental Exchange; that this excess is to be ascribed to the want of a sufficient check and control in the issues of paper from the Bank of England; and, originally, to the suspension of cash payments, which removed the natural and true control.\textsuperscript{16}

With the suspension of convertibility of the bank’s notes, the Bank of England did not have a formal cap on paper issuing. “In 1794, the Bank of England had discounted only for £2,520,000 of commercial paper. However, this had grown to £6,300,000 in 1800, £10,000,000 in 1805, and £13,250,000 in 1807 … to reach £24,793,990 on the 31st of August” (Knafo 2013, 173). However, the bank’s court of directors did not agree with the report’s conclusion. For them, the bank’s actions involved only the narrow interest of the bank and had nothing to do with a nation-wide phenomenon. As the bank’s representative to the Chancellor of the Exchequer said, “the Directors … cannot but feel a repugnance [toward] a system which, in their opinion, in all its great tendencies and operations, concerns the country in general more than the immediate interest of the Bank alone” (qtd. In J. Wood 2005, 52).

Therefore, the Bank of England directors did not share the vision of the financial market that intellectuals put forward. They denied the fact that their monetary policy had an effect on the overall value of bullion. For them, the bank had to preserve the prestige of the institution as well as provide benefits for their shareholders. They did not believe that it was possible to predict how the economic context would develop in the future (one of the main endeavours of

economics), and thus refused to align their practices with such a view. In the words of the representative of the bank’s court of directors:

   It is impossible for them to decide beforehand what shall be the course of events for the next two, much less for the next four years; they have no right to hazard a flattering conjecture, for which they have not real grounds, in which they may be disappointed, and for which they may be considered responsible. They cannot venture advice on unrelenting continuance of pecuniary pressures upon the Commercial world of which it is impossible for them either to foresee or estimate the consequences. (qtd. In J. Wood 2005, 53)

To some extent, the bullion committee corresponded to a case of symbolic struggle between the bank’s directors and economic experts, wherein two worldviews confronted one another. In contrast with the governors of the bank who focused on traditional banking practice and the strict profit of the banks, the economic experts aimed to highlight the bank’s impact on the monetary environment. In 1810, the Parliament of England ended up adopting the world view of the court of directors when they voted against the conclusions of the Bullion Committee reports. Such a decision signalled that the government did not consider that the Bank of England had a role to play within the domestic economic context. But rational reflection on the role of the central bank in economic stability continued afterward.

Whereas the renewal of the bank’s charter in 1832 did not advance any new principles, the Bank Charter Act of 1844 was informed by monetary theory. At the time two intellectual schools opposed each other in their vision of money creation: the currency school and the banking school. The two schools held different views on what constitutes money. The banking school considered that credit was a form of money, whereas for the currency school money was exclusively the mode of exchange in the final payment. Consequently, the two schools diverged on the question of money supply. Whereas the banking school perceived banking activities as being a generator of money, the currency school considered that money was created strictly through banknote issue. The 1844 Bank Charter Act, which separated the issue department from the banking department,
translated the view of the currency school. The idea behind separating the two departments was that a stable monetary context depended on note-issue control. The policy of the issue department was thus controlled through strict quota because the bank’s department was left to the discretionary actions of the banks’ directors.

With the Bank Charter Act, the bank still considered that its role was no different than that of any other banks. A good illustration of that view are the testimonies that James Morris and Henry Prescott, the governor and deputy governor of the bank, gave before the Commons Committee on the Commercial Distress in March 1848:

Q2651. (The Chairman) Do you consider that the Act of 1844 relieved you entirely from any responsibility as regarded the circulation? – Entirely.
Q2653. (The Chairman) With regard to the banking department, in what condition did the Act place you? – It placed the Bank of England in the condition of any other bank, except that we were carrying on business on a much larger scale, and we had also Government deposits to deal with. (Qtd. in Wood 2005, 13)

Economists and central banks’ specialists continued to call into question the directors’ views. To do so, they established a logical link between economic and financial distress that regularly hit the country and central banks’ incapacity to act. As they did so, the debate over the bank’s lender-of-last-resort function was pushed to the fore. An important figure in framing the bank’s lender-of-last-resort function was Walter Bagehot, whose “influence on shaping central bank policy,” according to Vera Smith, “must have been more considerable than that of any other single writer either here or on the Continent” (Smith 1936, 125). When Bagehot started to publish his ideas in 1866, the Bank of England did not agree with them. The debate between him and Thomson Hankey illustrates the terms of the controversy. What provoked the debate was Bagehot’s comment in The Economist that “the Bank agrees in fact, if not in name, to make unlimited advances on proper security to anyone who applies for it” (Bagehot 1873, 168). With such comments, Bagehot challenged the spirit of the 1844 Bank Act, according to which the bank
did not have to look after the entire system, and should act like any other bank for the benefit of its shareholders. Bagehot argued that even though the bank’s directors did not openly admit it, they had been lending freely in the past (both during the 1857 and 1866 crises), which had eventually shaped the expectations of the market that the bank would help in times of crisis. For Hankey, these conclusions were misleading. He answered by saying that “The Economist newspaper has put forth what, in my opinion, is the most mischievous doctrine ever broached in the monetary or banking world economy” (qtd. in Bagehot 1873, 169). Although, in practice, the directors started to act as a supervisory institution, in theory, the Bank of England directors still stuck to the perception that the Bank of England was like any other banks.

In 1873, Bagehot released *Lombard Street*, in which he exposed in greater detail his vision of how the Bank of England should act. With his book, Bagehot aimed to change the management practices of the directors of the Bank of England, who in his words, “were neither acquainted with right principles, nor were they protected by a judicious routine” (Bagehot 1873, 177). Bagehot wanted to force the bank’s directors to reflect rationally on their behaviour in respect to their role in the money market. And for him, the endorsement of the lender-of-last-resort function was the logical conclusion of that process. “A panic, in a word, is a species of neuralgia, and according to the rules of science you must not starve it. The holders of the cash reserve must be ready not only to keep it for their own liabilities, but to advance it most freely for the liabilities of others” (Bagehot 1873, 51).

Therefore, just as an inquiry commission provided a tribunal to develop rational thinking concerning the role of the Bank of England, Bagehot’s book pressured the banks’ directors to adopt such thinking. In concrete terms, the change of perception would lead the directors to perceive the institution not as primarily a private bank, but as an institution that has supervisory responsibility over the money and credit markets.
The Baring crisis of 1889 provided an occasion for the Bank of England to actively and publicly endorse the function of the lender of last resort. Baring and Company was an important player in the city of London. One of its main financial activities was to underwrite bonds for certain South American countries. When a revolution broke out in Argentina, the bonds lost their value and so did the portfolios of the institution. Facing financial problems, Baring and Company asked for the Bank of England’s help, and Lidderdale, the governor of the Bank of England, decided to help because Baring and Company’s bankruptcy would bring a major blow to the city. The governor appealed for the help of other banks, and managed to guarantee a fund of around 18 million pounds (Giannini 2011, 93). The Baring crisis was also an occasion when the governor decided to actively impose the bank’s authority on the banking sector.

Mr. Lidderdale’s great anxiety was to prevent the calling by the banks of the loans to bill brokers … There is a City tradition that one of the joint-stock banks … endeavoured to evade its share in the agreement to refrain from calling in its loans. It reverted to the old and discredited policy of isolated self-defence. The matter was brought to the attention of [the governor] Mr. Lidderdale who, with characteristic decision, sent for the manager and informed him that if the bank did not adhere loyally to the agreement he would close its account at the Bank of England and announce the fact in the evening newspapers. He is said to have given the manager an hour to make up his mind. It would be superfluous to add what the manager’s decision was. (Powell 1916, 526–27)

With the intervention of the Bank of England, the Baring crisis was successfully contained and a domino bankruptcy effect was avoided (Dowd 1996, 245). Therefore, in the context of the Baring crisis, the bank proved to be an efficient coordinator—a role that it would endorse many times thereafter.

**Central Banks and Rational Intervention**

Both the Banque de France and the Bank of England became supervisory institutions in a context where the economic environment and governmental intervention were rationalized in
different forms in the two countries. In France, the bank’s public function had been admitted very early on, but was strictly associated with public confidence in the money. The rationalization process corresponds to the bank’s depersonalized role and authority and the objectification of its position within the domestic context. From this material understanding of the bank’s environment stems the rationale characterizing of the bank’s supervisory function. By the 1870s, the bank was perceived as being able to play a stabilizing role within the domestic economy. In England, the rationalization process revolved around the question of whether or not the Bank of England was a bank like any other bank. Through inquiry commissions, economic experts made the point that the actions of the bank had a greater impact on the country’s economic context than other financial institutions had. This argument was first made through monetary questions. Inquiry members argued, for instance, that the institution’s banknote issue policy affected the price of bullion, a connection that the directors of the Bank of England initially denied. The question was solved with the 1844 Bank Charter act, which separated the issue department from the bank department. But the Bank of England still retained full autonomy in banking activities, and considered its actions in that domain as being like any other banks. The discussion around the lender-of-last-resort function challenged that idea. Its official endorsement of the lender-of-last-resort function presupposed that the bank ensured that it would lend to other financial institutions in times of crisis, and thus openly admitted its special position within the country.

In the process of rationalizing the practice of financial stability, central banks served as a great place to start to think about how to intervene in markets. Banks’ actions and decisions constituted for the economists a rich area of investigation to start to think about the governmental opportunity to influence markets. David Ricardo, for instance, started his career as an economist in 1809 by decrying the payment suspension by the Bank of England; his career ended in 1823 when he proposed a plan to reform the bank (De Boyer 1992, 559). The rationalization of central
banks’ activities led to developing principles regarding how central banks can influence the economic context. For example, through rationalization a logical connection was established between the number of banknotes issued by central banks and the value of money.

It can look paradoxical to propose that the central bank as a governing institution emerged amid a fundamental epistemic change concerning the desirability to control the economy that emerged in the middle of the nineteenth century because this century is associated with liberalism and *laissez-faire*. However, when we go back to the other core tenets of liberalism, the paradox disappears. Aside from being an ideology that advocates a minimum government, liberalism is an ideology that places the promise of scientific progress as its core (Dardot and Laval 2010; Hobsbawm 1975; Miller and Rose 2008). In the course of the nineteenth century, an inversion of prestige between philosophy and science occurred. For example, “in 1861, the statistician and economist Cournot observed that ‘the belief in philosophic truth has cooled off to such an extent that neither the public nor the academies any longer like to receive or to welcome works of this kind, except as products of pure scholarship or historical curiosity’” (Hobsbawm 1975, 294). At the time, the philosophers who experienced the most success were those who developed a positivist philosophy, such as August Comte, Herbert Spencer, and John Stuart Mill. Under scientific reason, markets started to be conceptualized as a sphere of reality disembodied from its social context and working with their own set of laws. Thus the rationalization of economic reality opened new political opportunities of intervention.

5. A Hybrid Authority

As a supervisory institution, central banks crystallized both public and private authority. In both France and England, their hybrid authority came to be perceived as the best combination for
intervening in financial markets. This hybrid authority was not in the footprints of the banks when they were first institutionalized, but it gradually arose as the banks moved to being supervisory institutions. That said, the process might not have happened. For instance, “as Vera Smith remarks in her classical text on the origins of central banking, there are 3 possibilities set-ups for issuing notes: (1) by centralized public body; (2) by a private institution subject to specific surveillance; and (3) by a multiplicity of competing private banks, subject, in the most liberal arrangement, only to commercial law and, in the least liberal, to a series of ad hoc control limiting their issuing capacity” (Giannini 2011, 49). It is interesting to note, in the case of the Bank of England as well as the Banque de France, that this hybrid authority came to be perceived as the legitimate way of regulating finance. In France the hybrid form of authority was adopted formally whereas in England it occurred informally.

**France**

During parliamentary debates and studies that lead to the renewal of the Banque de France’s privileges in 1897, the option of transforming the bank into either a state or a private bank had been extensively discussed and ultimately defeated. From these discussions, a consensus emerged around the idea that an authority that was both private and public was the best position to ensure a stable economy. The legislators considered that the bank had to both “make private interest prosper, and to act in favour of the general interest.”

The state’s partial autonomy was perceived as having many advantages. First, in looking back at the history of the bank, the legislators considered that it succeeded in avoiding the disturbances that had shaken the country, such as the 1830 revolution, because of its

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17 “Non pas pour défendre uniquement et faire prospérer des intérêts particuliers, mais pour agir dans l’intérêt général” (Banque de France archives, *Chambre des députés*, séance du 3 juin 1897, my translation).
independence. Moreover, in not being submissive to the state, the bank could financially help the French government in time of war, such as the 1870 war with Prussia. Finally, having some proximity to the commercial world was seen as something positive because it better positioned the bank to know what the best discount rate was to adopt. In a report made by the commission in charge of examining the renewal of its privilege, they explained how the bank set the discount rate: “[The Bank] observes the world markets, it takes into account the wealth of difficulties of commerce, and after having gathered all the information possible, the Bank adopts the discount rate that is the lowest possible in regard of the availabilities of the capital.”

At the same time, the bank’s total independence was also seen as detrimental to the country’s interest. The legislators did not want the bank to be too deeply involved in commercial activities. They considered that had the shareholders exclusively managed the bank, its prime objective would be to generate benefits—a politic that would have gone against the public interest. “The public wants the bank to offer its services at the lowest price possible while being prosperous enough to maintain its credit. And the State, which has to defend the public, has to maintain the preponderance of the Governor vis-à-vis the regents.”

The bank’s administrative body translated the hybrid character of the bank’s authority. By 1806, one governor and two deputy governors, who were named by the nation’s head but paid by the bank, succeeded to the

18 “Elle observe donc l’état du marché dans le monde ; elle tient compte de l’abondance ou de la difficulté des affaires, et après s’être entourée de tous les renseignements qui peuvent l’éclairer à cet égard, elle prend le taux le plus bas qui puisse être par les capitaux qui s’offrent” (Banque de France archives, Antonin Dubost, “Rapport fait au nom de la Commission charge d’examiner le projet de loi adopté par la Chambre des députés, portant prorogation du privilège de la Banque de France,” Session extraordinaire du 22 octobre 1897, 48, my translation).

19 “Le public veut que la Banque, tout en étant assez prospère pour maintenir son crédit, fasse payer ses services aussi bon marché que possible. Et l’État, qui a à défendre le public, doit maintenir la prépondérance du Gouverneur à l’égard des régents” (Banque de France archives, Minutes of the Banque de France, Séance du 16 Février 1891, my translation).
directory committee named by the bank. Moreover, the shareholders’ assembly had to vote for fifteen regents and three auditors who were usually from the commercial and banking elites.\textsuperscript{20}

\textit{England}

In England, the hybrid character of the bank’s authority started with the Bank Charter Act when its note-issuing department was separated from the banking business. By separating the two departments, the law created a sort of dual structure within which each public and private authority had its own sphere of influence. In that sense, the spirit behind the bank’s charter act was that the bank could freely generate profit for its shareholders as long as it respected the limits regarding banknote issue. “Sir Robert Pell, presenting the bill that would later become the Bank Charter Act of 1844, had explicitly exhorted the Bank of England to only serve the interest of profit, while the law would safeguard public interest” (Giannini 2011, 79). In fact, shortly after it was passed, it became obvious that the Bank Charter Act could not ensure the country’s economic and financial stability. Already in 1847, the country was hit by a liquidity crisis that challenged the issue ceiling that had been established by law. The liquidity crisis led to the collapse of an important number of provincial banks, eventually affecting the Bank of England’s reserve which started to decrease dangerously. The Bank of England then faced a dilemma. “On the one hand, they were under pressure to continue rediscounting private paper, increasing the market’s liquidity even at the cost of further deleting their own reserves. On the other hand, they met with growing concern on the part of shareholders, who pleaded for precautionary measures to be taken in order to preserve a sound capital base” (Giannini 2011, 86). If the bank respected the law, it would have endangered both economic stability as well as the value of the pound. A letter

\textsuperscript{20} Ibid.
from the treasury, in which the government recognized the situation and made certain promises, resolved the issue:

The discredit and distrust which have resulted from these events, and the withdrawal of a large amount of the paper circulation authorised by the existing Bank Acts, appear to Her Majesty’s Government to render it necessary for them to inform the Directors of the Bank of England, that if they should be unable in the present emergency to meet the demands for discounts and advances upon approved securities without exceeding the limits of their circulation prescribed by the Act of 1844, the Government will be prepared to propose to Parliament, upon its meeting, a Bill of Indemnity for any excess so issued.21

This way of doing things helped to restore some faith in the economy’s stability. This “treasury letter” was not the last one; in other cases of financial distress, such as in 1866, the treasury used similar processes thereafter. What is interesting to note with the treasury letter is how it translated the view that to appropriately fulfill its central bank function, some sort of public authority was necessary. Yet the public involvement remained informal rather than formal and a flexible system was preferred over a more rigid one. As a central bank, the Bank of England could count on “the issue of Treasury bills at an opportune moment” (Morgan 1965, 226).

In the private sphere, the bank also relied on informal practice. The bank’s role as a lender of last resort placed the institution at the centre of the banking community. Starting with the Baring crisis, the central banks acted as a coordinator of liquidity loan. Thereafter, the bank’s authority depended upon its capacity to convince other banks to follow its lead.

The Bank depended largely to an ever-increasing extent on the co-operation of the joint-stock banks; not merely on their keeping their balances with it, and varying their liabilities, both short and long term, in response to a change in these balances; but also on their being willing to follow the lead of the Bank without its having to resort to such coercion, and even at times on their lending their short funds to it rather than to the market. (Morgan 1965, 226)

6. The 1908 National Monetary Commission in the United States: The Epistemic Connection between Central Banks, Stability, and Progress

By the turn of the century, central banks as “stabilizers” rather than “profit makers” became a widely accepted idea. As Vera Smith argued, “in the present century centralized banking systems have come to be regarded as the usual concomitant, if not one of the conditions of the attainment of an advanced state of economic development. The belief in the desirability of central bank organization is universal” (Smith 1936, 1). A consensus crystallized not only around the raison d’être of central banking, but also around some basic features of their specific authority. Central banks came to be associated with stability endeavours and modern systems of credit. The US 1908 National Monetary Commission, for example, expressed the new epistemic context underlying the creation of central banking, and thus signalled the formation of a trans-Atlantic consensus around central banking.

The 1908 National Monetary Commission played a key role in the diffusion of the European notion of central banks within the United States. The commission’s work involved an extensive study of central banks’ practice and of credit markets in Europe—it was published in twenty-four volumes in 1910. Key actors in the commission and the subsequent legislative process that eventually gave birth to the Federal Reserve were strong proponents of the “European” way of doing things.

Nelson Aldrich, chairman of the Senate Committee on Banking and Currency, remained at the center of the banking reform movement … He was persuaded of the efficacy of the European-style discount and central banking system by Paul Warburg, a partner in the firm of Kuhn Loeb. (Bordo and Wheelock 2013, 66)

Warburg was a German banker who had immigrated to the United States in 1902. His practice provided him with a deep knowledge of the English, French, and German systems of credit and
regulation and he was convinced of their superiority over the US credit system. Thanks to his close relation with Aldrich, he played an important role in the institutionalization of the Federal Reserve.

The foundation of the Federal Reserve in the United States and more specifically the National Monetary Commission, which preceded it, reveal the new epistemic context underlying the creation of central banking in two ways. First, the very idea of the commission was an expression of the process of rationalizing the relation between government and market. And second, the discourse within the commission clearly articulated the epistemic connection between central banks, stability, and the modern organization of credit.

The very form of the inquiry corresponds to an exercise in rationalizing the US banking context. The National Monetary Commission was established in the aftermath of the most severe financial crashes that had hit the United States within the last 100 years. The financial crisis lasted fifteen months, during which “the value of all listed stock in the United States declined 37 percent” (Bruner and Carr 2007, 115). The peak of the crisis corresponded to a bank panic in the fall of 1907 that led to the bankruptcy of more than twenty-five banks and seventeen trust companies (Bruner and Carr 2007, 115). The crisis came as a shock for the country. As the chair of the commission, Republican Senator Nelson W. Aldrich, described it:

To the great majority of the people of the country the blow came without a warning. Most of our banking institutions were in excellent condition, business of every kind was prosperous, labor was fully employed at satisfactory wages, industries of every kind were flourishing. Our people were full of hope and confidence for the future. Suddenly the banks of the country suspended payments, and acknowledged their inability to meet their current obligation on demand. The results of these suspensions were felt at once; it became impossible in many cases to secure funds or credit to move crops or to carry on ordinary business operations; a complete disruption of domestic exchange took place; disorganization and financial embarrassment affected seriously every industry; thousands of men were thrown out of employment, and the wages of the employed were reduced. (Aldrich 1910, 2–3)
Aldrich’s commission aimed to study the US regulation system systematically in light of the ones in European countries. As he put it, “I believe that no one can carefully study the experience of the other great commercial nations without being convinced that disastrous results of recurring have been successfully prevented by a proper organization of capital and by the adoption of wise methods of banking and of currency” (Aldrich 1910, 5). He also pointed out the essential role of rational thinking in moving forward. “I believe that the experience of these countries with centuries of economic life, and where human nature is much the same as in ours, where every financial problem receives careful and intelligent consideration, and where vast financial transactions are constantly taking place, should certainly be suggestive and valuable to use” (Aldrich 1910, 7).

Amid the extensive research of the commission, a consensus emerged around the view that central banks were an essential condition to achieve economic and financial stability. At the turn of the nineteenth century, markets were strongly integrated, and thus the American financial crisis was felt in many cities around the globe, such as Amsterdam, Hamburg, Genoa, Copenhagen, Chile, and Mexico (Cassis 2011, 17). However, the American crisis affected important European capitals only very moderately. In the case of France, there was no crisis. Maurice Patron argued before the commission that the absence of crisis was because of the Bank of France’s intervention: “We see also that for the last fifteen years this intervention has been able to banish all crises and all reactions of crises from our national market” (Patron 1910, 122). The apparent success of European countries in coping with the crisis compared to their American counterparts generated the view that the American system of financial governance was inappropriate and inefficient. As Sprague wrote in 1908,

During the eighteenth and the greater part of the last century it would be difficult to find an instance of a period of decided trade reaction which began without sudden and violent disturbance, but in some countries, notably in France and Great Britain,
recessions in business activity during the last forty years have come about with a noteworthy diminution of strain, sudden collapse, and general destruction of credit, even the crisis of 1890 being, properly speaking, a crisis averted. In the United States, on the other hand, crises have been no less frequent, and there has been no alleviation in their sudden and disastrous consequences. (Sprague 1908, 353)

At the time of the crisis, the United States did not have a system of central banking, but a “National Banking System,” which was created during the civil war with the National Currency Act of 1863 and 1864 (Mehrling 2011, 30). The acts had created the national bank notes, which were issued by private banks, using government bonds as collateral (Mehrling 2011, 30). Moreover, many financial institutions, such as trust funds, were not part of the National Banking Regulation. It was the collapse of one of these trust founds—the Knickerbocker Trust—that triggered the crisis. Therefore, as the European system of central banking came to be perceived as a modern way to regulate finance, the US National Banking system was considered backward and outdated. In the words of Paul M. Warburg, “it is now generally acknowledged, even by those who were formerly most unwilling to concede it, that the end of 1907 witnessed one of the most impressive victories of the central banks’ system” (Warburg 1910, 513). It is in this context that the National Inquiry Commission was institutionalized and charged with the mandate of determining “what changes are necessary or desirable in the monetary system of the United States or in the laws’ relation to banking and currency” (qtd. in Dewald 1972, 931).

The work done during the National Monetary Commission influenced what has been called the Aldrich plan,22 which was used as a blueprint in the Federal Reserve Act of 1913. “Although not realized in its original form, the plan was in effect a catalyst for debate about the role of the government and the banking industry in the central bank’s governance” (Bordo and Roberds 2013, 2). The administrative structure of the new Federal Reserve reflected the consensus around

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22 Because the members of the commission could not agree on the final document, the Aldrich plan was in fact drafted by the senator himself along with a group of bankers who were present at the commission and a US Treasury official. See Bordo and Roberds 2013.
the idea that a hybrid authority between public and private elements was best suited for a central bank.

Of the nine-member reserve bank boards of directors, only three could be bankers. The other directors engaged in commerce or industry, or agriculture and were to be elected by bankers and the remaining three directors were to be named by the Federal Reserve board in Washington, DC. The bill also identified the Federal Reserve Board as the controlling agency. (Bordo and Roberds 2013, 3)

In line with the National Monetary Commission, the incentive behind the Federal Reserve’s creation was not only the modernization of monetary policy but also banking supervision. The title of the act clearly articulates its objective: “An Act to provide for the establishment of Federal reserve banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, 

to establish a more effective supervision of banking in the United States, and for other purposes” (qtd. in White 2013, 7, emphasis added).

7. Synopsis

This chapter tackles the rise of central banking as a practice of governance. It argues that central banks became a supervisory institution amid the rationalization of the economic environment and the position of the bank within it. By the end of the nineteenth century, a consensus around central banking arose. Not only central banks became perceived as legitimate institutions of governance, but also the basic characteristics of their authority crystallised around two main principles. First, “central” bank came to be seen as a rational authority, and, second, the institution combined both public and private authority. Consequently, the historical transition of central banks from a “bank amongst other banks” to the “bank of banks” represents a defining moment that shaped the fundamental nature of central banks’ authority that still hold today.
The next chapters investigate the different practices of financial stabilization that have been performed by central banks over time. During the gold standard era, the scientific principle was quite simple. “Convertibility was seen as the single anchor that underpinned both monetary and financial stability. One the one hand, gold convertibility was identified with monetary stability and thought to deliver stable prices, at least over medium to long-term horizons. On the other hand, the convertibility constraint would give way or threaten to do so at times of financial instability” (Borio, Toniolo, and Clement 2008). With time, principles became more and more sophisticated. In chapter 5, I look at the transformative power of macro-economy and the rise of capital-flow-based types of intervention, and in chapter 6, scientific finance and the formation of a standard-based type of regulation.
As chapter 3 detailed, central banks’ supervisory role arose amid epistemic changes related to the practice of financial regulation. Symbolically, the emergence of central banking as a practice geared to the well-being of the financial system can be associated with their endorsement as the lender of last resort because it represents the banks’ willingness to privilege the stability of the system over profit making. The rise of central banking and the rationalization of financial governance was an iterative process. While central banks were a good place to start thinking rationally about financial governance, such rational thinking about their position within the domestic banking context changed the perception of their role. In the course of this transition, central banks acquired the authority that provided them with the capacity to act. Rationalizing governmental actions within the domestic economy not only created the practice of central banking, but also placed central banks at the core of a rationalized system of credit. At the turn of the century, central banks came to be associated with a stable economy and the modern organization of credit.

Against the standard views in IPE that qualify the gold standard regime as a liberal system of governance, I perceive the gold standard as the first attempt to governmentally regulate markets. In adopting the market/state dichotomy, most IPE studies have understood the gold standard as an attempt to impose market discipline on the state in contrast with the Bretton Woods system, where it was the other way around (Ruggie 1982). But in line with Knafo, when comparing the gold standard with previous monetary governance instead of subsequent ones, it is
possible to notice that “it presented, in fact, a pivotal step in the construction of more interventionist forms of monetary policy” (Knafo 2006, 80). Instead of corresponding to a retreat from governments, the gold standard constituted one of the first coherent attempts to governmentally intervene on markets’ stability.

Whereas the preceding chapter addressed the emergence of central banks as a supervisory institution, this chapter addresses the actual content of central banks’ governing practices at the turn of the nineteenth century. As many IPE scholars have pointed out, central banks were at the centre of the first coherent regime of international governance—the gold standard.¹ Scholars usually characterize the gold standard by referring to the rules regulating the regime. At the most basic level, the gold standard consists of anchoring the value of the currency to a pre-fixed amount of gold. The textbook definition of the gold standard regime considers the gold standard as some sort of automatic system of rules that rests on the free flow of capital: in theory, central banks would correct balance of payment in accordance with gold inflow and outflow. However, referring to some notion of “rules” to understand how the gold standard works seems somehow erroneous. The very idea of “rules of the game” was heard for the first time during the hearings of the Macmillian Committee, a committee formed in 1929 by the British government to determine the cause of the depression in the United Kingdom. The term was first used by Sir Robert Kindersley, a director of the Bank of England, and used again by Keynes to finally be included in the committee’s reports (Bordo and Schwartz 1984, 195). In contrast with subsequent regimes of governance such as the Bretton Woods system, the gold standard regime had not been planned and drafted. How then did the gold standard come about and how did it work?

To answer this question, I look at the cognitive dimension of central banking by investigating who governs and how governance takes place. Whereas I show in the preceding chapter that the fundamental purpose of central banking transformed, here I demonstrate that the cultural background of central banks’ executive members remained the same. Coming from old traditional elites of the banking and commercial sectors, central banks’ executive members mobilized the knowledge that was available to them, namely banking practice. Therefore, I argue that the gold standard was shaped through a conservative community of practice. The rationalization of the role of central banks within the domestic context pushed concerns of stability to the fore. Yet the perception of what constitutes a stable context did not follow abstract indicators. Rather, stable context was defined in simple material terms. Central banks intervened based on simple banking principles. Traditional banking knowledge, which used to be geared to profit making, was adapted to the new purposes of stability.

Therefore, instead of starting from specific ideas or rules, this chapter investigates how governance takes place and aims to inductively recover the knowledge bound within the practice of such governance. I show that the gold standard was first and foremost a practice of stability performed through banking procedures. For central banks, the gold standard was the only regime when central banks had unified rules to ensure financial and monetary stability at the same time. Financial stability was anchored in money convertibility. Consequently, the gold standard corresponds to what I call a monetary-based practice of governance performed by central banks to ensure financial stability. The analysis of this chapter draws on various types of literature and documents: the work of economic historians, the writing of early twentieth central banks’ specialists, the archives of the Banque de France, as well as reports written in the context of the 1910 National Inquiry Commission in the United States.
1. The Social Underpinning of the Gold Standard: A Traditional Community

It is not possible to dissociate a practice from its practitioners since the knowledge that is bound to the practice is also situated at the back of social agents’ minds. In that sense, investigating “who governs” allows us to understand how a specific practice has been constituted in a certain way and not others. In other words, what were the social dispositions (embedded social trajectories) and hierarchical positions of the community of practice who were running both the Bank of England and the Banque de France? Social dispositions and positions matter because they shape the mental schemes of perception of the social agents who perform the practice. As much as social agents shape the environment around them through their everyday activities, the environment in which they evolve influences the way they are, think, and act. Consequently, addressing the dispositions and positions of the practice community helps us to understand the structure of opportunities under which new types of knowledge can be incorporated into the practice.

Characteristics of the Community of Practice

The cultural background of the practice community running both the bank of England and the Banque de France remained relatively stable through the nineteenth century. In each country, the central banking practice communities were highly integrated within their domestic context. We can say that they constituted a practice community since they were bound by the same practice in addition to sharing similar characteristics. Criteria of competence and credibility were very similar in both countries. The individual characteristics and merits of the governor did not really matter. The banks were run as a collective enterprise, and little room existed for creative thinking. The groups that were at the head of the bank were highly homogenous. The group
already in place selected the new members based on the following criteria: candidates had to share the values of the community and had to demonstrate a desire to respect the logic of the institution. Symbolically, the two banks were at the top of the business world hierarchy; the executive members were part of the national elite. As such, the political and business communities considered a position at the bank to be highly prestigious. Positions on the executive committee of the banks were a source of pride for those holding them, and the work was considered almost voluntary.

**England**

In England, old traditions defined who would be on the bank’s executive committee. The bank was run by the court of directors which had twenty-four members, in addition to a deputy-governor and a governor. The deputy-governor and governor were not selected based on individual merits; rather, their nomination followed a two-year rotation system. “The Deputy-Governor always succeeds the Governor, and usually the oldest director who has not been in office becomes Deputy-Governor” (Bagehot 1873, 209). Consequently, age was a defining factor in establishing hierarchy within the bank. The court of directors chose new members among “important” young individuals in old established financial firms. “The young part of the board is the fluctuating part, and the old part is the permanent part, and therefore it is not surprising that the young part has little influence” (Bagehot 1873, 211). The tradition that established the bank’s hierarchy was almost as old as the bank. It came to an end when the governor of the bank, Walter Cunliffe, was reappointed for a five-year mandate in the context of the First World War.²

² Before that William Lidderdale had been an exception to the rotating system by endorsing two two years mandates. The financial press such as the Economist continually praised his capacity to conduct the affairs of the bank. See Sayers 1936, 12.
Members of the executive board were the financial elite of the City of London (Cassis 1985, 210-29). Directors kept their position at the financial firms where they originally worked. For the most part, they came from merchant banks and merchant house banks. Cassis, who surveyed the firms that were represented by the court of directors during the late nineteenth century, observed that almost half of them were merchant house (seventeen out thirty-five), thirteen were merchant banks, and five were various industries such as breweries (Cassis 1984, 109). Within the city, a position at the bank was perceived as highly prestigious, and the most prestigious of all was the position of governor. As Alfred Clayton, governor of the Bank of England from 1911 to 1913, wrote to his former Eton professor: “It is of course very pleasant to get to the top of the tree although in my case that means more work and more responsibilities, and I have never been so afraid of one as the other” (qtd. in Cassis 1984, 111). The individuals who held positions of authority at the Bank of England also perceived such positions to be a great honour. “The status which is given by it, both to the individual who fills it and to the firm of merchants to which he belongs is considerable” (Bagehot 1873, 209).

They were important social barriers to access the community who held position of authority within the bank. Bankers held the great majority of these positions, and the business of banking was in most cases a family affair. In this way, the community was self-reproductive. Sons of bankers were likely to be bankers as well, a reality that was reproduced to some extent within the Bank of England’s structure. For instance, Evelyn Hubbard, who was director of the bank between 1890 and 1909, said in a letter that he inherited his position from his father (Cassis 1987, 92). Another well-known example is Montagu Norman—governor of the Bank of England during the Great Depression—who was the grandson of the director Warde Norman and the governor Mark Collet. The rich prosopographical analysis of the city (that is, a study of social trajectories) by Yousef Cassis situates the position of the banker communities within English society at large.
Although being a son of bankers did not make a man automatically part of the social elite, the members of the board of directors were part of the city’s aristocracy (Cassis 1987, 155). This aristocracy was socially enmeshed with the political elite, which until 1914 was largely composed of the aristocracy and gentry. Various channels of social integration existed between the two groups: 1) education, 2) marriage, and 3) lifestyle. In England, an important *rite de passage* to become part of the group of elites was an education at a public school (the most important of them being Eton and Harrow), as well as an education at the elite universities of Oxford and Cambridge. The directors of the Bank of England were for the most part educated in one of these schools. As Cassis comments:

> It is interesting to notice that the division between the firms which were represented at the Bank of England and those which were not, perfectly coincides with the type of education their partners had received; the former having been to a public school, Oxford or Cambridge, the latter having had another type of education or, more often, the details about their education are not known. (Cassis 1987, 214)

Marriages also was an important channel of social integration between the aristocracy and the directors of the Bank of England. Although the business of banking was often a family affair, the daughters of bankers would often marry outside the banking circle. Aristocrats were the social categories that bank directors’ daughters married in the highest number (24%), followed by bankers (10%), and merchants (10%) (Cassis 1985, 217). Finally, the bankers had a lifestyle similar to the aristocracy’s. As Cassis explains, contrary to the Northern industrials who had to abandon their profession to become part of high society, the profession of banker was compatible with the lifestyle of high society (1987, 165). High-positioned bankers had a lot of leisure. Great investments did not need much care. Bagehot described a banker at the time like this:

> Most of them have a good deal of leisure, for the life of a man of business who employs only his own capital, and employs it nearly always in the same way, is by no means fully employed. Hardly any capital is enough to employ the principal partner's time, and if such a man is very busy, it is a sign of something wrong. Either he is working at detail, which subordinates would do better, and which he had better
leave alone, or he is engaged in too many speculations, is incurring more liabilities than his capital will bear, and so may be ruined. (Bagehot 1873, 214)

For Morgan, the personal relations that the Bank of England’s directors maintained with the aristocracy were crucial to the art of central banking.

Personal relationships were highly important. The giving or withholding of co-operation depended on a personal decision, and the help to be expected from each source would constantly vary in response to personal as well as external factors. The directors had, therefore, not only to attend the matters of minute detail, but also to cultivate numerous personal relationships … About all this there was nothing automatic, no simple and obvious rule by which all decision could be tried. (Morgan 1965, 225)

France

As in the Bank of England, the community who defined the policy of the Banque de France remained very traditional until the end of the century. The bank’s 1803 founding act stipulated that the bank would be run by a council of eighteen regents elected by its shareholders. In 1806, Napoleon added a governor and two deputy-governors to the executive body who were appointed by the government in power. Whereas the council of regents was the supreme body of the bank, the governor presided over the meeting of the general assembly. He also had to put his signature on every document of the bank (Blancheton 2001, 50).

The work of economic historian Alain Plessis helps us to better understand the cultural value of the council of regents in the Banque de France. The regents represented various sectors of the high-level business: they were merchants, men of commerce, bankers, industrialists, and paymaster-generals. Regents belonged to the “financial” aristocracy of the country. Almost half of them came from well-established families. The other half socially ascended from the middle upper bourgeoisie (Plessis 1985, 62–63). The community of regents experienced a considerable in-group feeling. Whereas formally, regents were supposed to be elected by the shareholders,
new regents were practically co-opted by the council. In fact, the assembly of shareholders had to ratify the election’s result. Conformism was very important. As Plessis explains, sharing the values of the community and holding a similar vision of the bank’s policy were perceived to be the most determinant conditions for being elected regent (Plessis 1985, 15). The new regents had to prove that they had similar views as the established group of regents regarding the bank’s interest. Eminent bankers like Pereire could not have been admitted—he was an outspoken critic of the Banque de France’s policy (Plessis 1985, 15).

The position of regent came with a lot of prestige. To fulfill their task, the regents accepted a salary that was pretty much symbolic. The selected individuals would reiterate how honoured they were to have been chosen to “cooperate in the high mission of the bank” and “to be part of such a distinguished group.” These lines written by a regent to the governor in 1867 speak of the feeling of prestige attached to the position: “I always considered that my position at the Bank was the highest consecration of a life like mine dedicated to businesses and the industries.”

In theory the council of regents and the governor were supposed to balance each other: the council of regents would make important decisions, and the governor had to sign every bank document. When differences arose, it was usually the council’s opinion that was followed. For example, in 1861 the council refused to adopt the governor’s view on the question of the open market, or the question of the number of signatures on the discount bills in 1891 (Leclercq 2010, 42). In practice, the governor’s and the council’s views converged most of the time. Whereas the governor was selected by the government, he was paid by the bank. The length of his mandate also put the governor in a position where he had to act independently of the political trend. The

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3 “Coopérer à la haute mission de la banque” and “Une réunion d’hommes aussi éminents” (qtd. in Plessis, 1985, 62-63, my translation).
4 “J’ai toujours considéré que ma position à la Banque était la consécration la plus élevée d’une vie vouée comme la mienne à l’industrie et aux affaires” (qtd. in Plessis, 1985 62-63, my translation).
governor was expected to follow the “logic of the institution” (Leclercq 2010, 42). As such, his role was more as the bank’s ambassador to the government than the government’s delegate at the Bank (Leclercq 2010, 42). Typically, the men who would be named governors were men who had experience in business and had important positions within the governmental structure.

The board of the bank was an important point where various members of the French social elite could meet together.

[The board of directors] was in any case a place where influential bankers met representatives of other sections of the economic elite and where both conferred with the top civil servants who usually made up the “government of the Bank” with its Governors and two Deputy Governors. In its actual running, the Banque de France thus organized regular meetings between the major bankers and other members of the French social elite in order for them to voice their respective points of view. (Bonin 1992, 150)

One hundred years after its foundation, the Banque de France still had the same executive structure and the social dispositions of the bank’s members remained pretty stable. However, the social position of major bankers represented at the board seemed to change over time. They changed from closed circles to being more integrated into French society and aristocratic circles.

[Ba]nkers began to adopt lifestyles that brought them close to traditional high society. They gradually ceased to live in the Chaussée d’Antin in favour of mansions in areas of high standing, like the place Vendôme, or the areas around the park Monceau or the place de la Concorde (the hotel Talleyrand, where Alphonse de Rothschild lived in the rue Saint-Florentin, was not far from the home of Henri Germain in the rue du Fauburg Saint-Honoré). Their children, like those of other middle-class families, attended the lycée, and they themselves frequented aristocratic clubs like the Jockey Club or the Nouveau Cercle. (Bonin 1992, 154)

The Community of Practice and the Boundaries of Knowledge

The knowledge that could be mobilized in central banks’ governing practice during the gold standard was shaped through the specific social dispositions and positions of the community of practice. During the nineteenth century, the governing community of central banks remained very
traditional. Because the communities were highly autonomous and held a position of prestige within their domestic context, the rules of the community’s reproduction were internally defined and hardly challenged by the rest of the society. New members were co-opted by old members. Men with practical knowledge in commerce and banking as well as professional backgrounds in prestigious firms were considered the most capable of running the banks. To be part of the central banks’ executive members, newcomers had to show that they shared the community’s characteristics. Candidates with “new” types of social backgrounds were dismissed. For example, in France, the council of regents refused the only candidate who presented himself as an economist and theorist (Plessis 1985, 13). Instead, the council selected applicants who indicated in their application that they were encouraged by “the marks of sympathy” given by the bank’s administration (Plessis 1985, 15). As Plessis explained, these marks or signs of sympathy implied that applicants adhered to the conception of the community already in place. Conservative thinking was thus a constitutive characteristic of the community, which restrained possibilities of incorporating new type of expertise.

Consequently, as the fundamental purpose of central banks changed from profit making to stabilization, the knowledge mobilized by the community related to traditional banking practices. In contrast with subsequent periods, the representation of the economy underlying central bankers’ actions was not abstract, but rather was associated with their immediate material environment. Economic markets were being represented through banking infrastructure. Along the same lines, Bertrand Blancheton argues that the term “issue policy” is more appropriate than “monetary policy” to designate central banks’ pre-1914 money policy. As it is now understood, the concept of monetary policy relates to abstract concepts such as price stability, unemployment

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5 See chapter 3.
6 “Politique d’émission” (Blancheton 2001, my translation).
levels, or economic growth. Yet none of these sophisticated concepts existed at the time. Rather, central banks were anchoring their practice to what was most available to them, namely banking knowledge. That knowledge, lying under the representation of economy (know what), was related to the banking system. Such a representation was the reference point for understanding problems of stability (know why) and instruments used to solve these problems (know how). As such, issues of stability were directly related to banks’ bankruptcy and the value of money. To solve these problems, banks used tools to maintain money’s convertibility.

2. The Gold Standard in Action: Governing through Money and Credit

Historical economists who have investigated the gold standard have tried to assess whether or not central banks were behaving in accordance with the rules of the game, namely whether or not they were adjusting the balance of payment in accordance with gold inflow and outflow. They have found that, in practice, variations of the bank rate did not follow the movement of gold (Bloomfield 1978; Bordo and Schwartz 1984). In its daily expression, the gold standard revealed itself to be somewhat improvised. Performed by the traditional community who governed the central banks, the gold standard presupposed the adaptation of banking knowledge to the purpose of stability. Central banks ensure financial stability through their bank reserve, the discount rate and the real bill doctrine.

The Bank Reserve

At the turn of the nineteenth century, maintaining the bank reserve was the central purpose of the art of central banking for two reasons. First, an adequate bank reserve was, in a gold standard system, the key to ensuring money’s convertibility and value. Whereas in England this
reserve was exclusively based on gold, in France, the reserve included both gold and silver. The Bank de France used both metals for domestic cash convertibility and gold for international transactions (Leclercq 1996, 849-72). France adhered to an “informal” gold standard that differed from the formal English gold standard, which entailed a fixed amount of gold (Flandreau 1996, 869–70). This flexible monetary policy based on bimetallism helped France to accumulate one of the most important and stable gold reserves.

The capacity of central banks to ensure convertibility, which depended on the bank reserve, brought confidence to the economic system, and thus constituted the core of stabilization endeavours. This principle was a matter of consensus between the two theories of money at the time: the banking school and the currency school. The two schools had different views regarding money creation. For the currency school, money was generated through bank notes only, whereas the banking school perceived banking activities, such as deposits and bills of exchange, as another money generator. For both schools, however, the maintenance of gold’s parity was considered the ultimate guarantor of a stable monetary environment and, by the same token, the financial environment.

Second and related, the bank reserve was crucial for central banks because it granted their privileged status. The central banks’ reserve was what made them special compared to the other banks. For instance, the French Minister of Finance, M. Georges Cochery, pointed out in 1897, that what provided the relative strength of the Bank de France vis-à-vis other banks was its cash and gold reserve.7

Discounts at a general level are well done, especially in our times, by particular banks, which use their deposits. However, those banks are exposed to sudden withdrawal; they are thus exposed to the danger of public nervousness. It is

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7 Banque de France Archives, Chambre des députés, Séance du 3 juin 1897.
necessary that behind them, one institution stands as a reserve, with widespread credit and trust, that does not face the same risk as other banks.  

Serving as the ultimate holder of bullion, a central bank could support the country in times of crisis, but also, as Cochery’s comments illustrate, the mere existence of such a reserve brought confidence to the economy in times of stability.

The central bank’s reserve was thus perceived as a source of prestige for the institution. In France the House of Commons debates often highlighted that the prestige of the institution depended on the importance of the bank’s resources. During the gold standard period, France was “the richest country of the world in gold,” and for Maurice Patron, this was “thanks to its Bank, which ha[d] skilfully watched over and centralized arrivals of the precious metal” (Patron 1910, 22). The importance of French gold holdings placed the Banque de France in a good position to help the Bank of England in times of crisis. For example, the Banque de France provided gold loans to the Bank of England during the 1890 Baring crisis and helped to discount English paper during the 1907 American crisis (Bloomfield 1978). Such financial support was a source of pride in France and felt as a humiliation in England (Sayers 1936). This prestige associated with the bank reserve was thus felt as much at a domestic level as internationally.

The Discount Rate

The bank rate has always been a crucial component of central banks’ toolkit, but setting the bank rate became a complex enterprise when central banks adopted a supervisory position within the economic context. In contrast with today’s monetary policy, in the nineteenth century there

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8 “L’escompte est, d’une manière générale, bien assuré, surtout à l’époque actuelle, par les banques particulières qui y emploient les dépôts reçus par elles ; mais ces banques sont exposées à des retrait brusques; elles sont exposées aussi aux danger de la nervosité du public, et il est indispensable que derrière elles se trouve, comme réserve, un vaste établissement qui par l’étendue et la solidité de son crédit et la confiance qu’il inspire n’a pas à courir le même risque” (Charles Brouilhet, Le nouveau régime de la Banque de France: loi du 17 Novembre, Banque de France Archives, 1899, my translation).
were no standard rules of how to set the most appropriate bank rate. The rate was set based on tradition or rules of thumb or the practical needs of the monetary and commercial context. Setting the bank rate followed very simple principles. For instance, a stable rate was perceived as generating a stable context because a low bank rate was perceived as being beneficial to the commercial context.

Before central banks endorsed their supervisory role, they had a passive position regarding the bank rate. Fixed rules set minimal standards and the rate would vary according to the actions of the public. The words that Governor Horsley pronounced before the committee on the Bank of England charter in 1832 illustrate that principle. When asked whether the Bank of England has “the power of regulating the whole circulation of the country,” he replied, “the Bank are very desirous not to exercise any power, but to leave the Public to use the power which they possess, of returning Bank paper for Bullion.” The bank had traditionally been dealing with a bank rate that varied within only a very narrow range. “It was never reduced below 4 per cent, and the usury laws prevented it from rising above 5” (Hawtrey 1932, 136). The 4 percent rule, which is often referred to as the “Palmer rule,” was nothing more than mere convention (Goodhart 2010).

Consequently, when central banks shifted from their passive position toward the bank rate to an active one, no clear principles guided them in that enterprise. Central banks faced the major problem of not being able to make the “bank rate effective,” in the sense that the market rate did not coincide with the bank rate (Sayers 1936). This problem was more salient in England, which at the time was the “clearing house of the world.” Banking activities in London were much more important than in any other financial centres: almost all international transactions would transit through London. It was at the end of the 1870s that the bank rate became increasingly out of touch with the market rate. Banks were discounting papers at a lower rate than the one set by the

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9 Evidence to the Committee of Secrecy on the Bank of England Charter, 1832, Q78, qtd. in Horsefield 1949, 146.
Bank of England. Prior to that period, “at all ordinary moments,” wrote Bagehot, “there is not money enough in Lombard Street to discount all the bills in Lombard Street without taking some money from the Bank of England.” (Bagehot 1873, 114). Under those circumstances the bank rate was necessarily either the effective market rate “or very near to it” (Sayers 1936, 2). However, shortly after the publication of Bagehot’s *Lombard Street*, the discount market took up such big proportions that Bagehot’s statement was no longer valid.

At the beginning of the 1890s, the bank started to find ways to make its rate more effective. “But, generally speaking, unless there was a rapid collection of Government revenue or a great efflux of gold, the Bank Rate was guided by the Market Rate rather than *vice versa*” (Sayers 1936, 5). The bank’s inability to control the discount rate was perceived as a threat to the international position of London as the centre of the gold standard system. In times of crisis, to make the market rate and bank rate coincide, the Bank of England’s governor asked the most important joint stock banks to respect the Bank of England’s benchmark. After the Baring crisis, the joint stock banks “resolved to meet in times of difficulty for the purpose of rendering support to the Bank of England” (Sayers 1936, 13). Therefore, the method used to coordinate the rate did not follow abstract principles. Rather, the Bank of England and joint stock banks’ directors simply agreed to meet in times of need to coordinate their discount policy.

Whereas situations of crisis facilitated the bank rate’s coordination, times of stability made the alignment of the rate difficult. Sayers demonstrated that the bank did not have any systematic practice to make the bank rate more effective. To raise the market rate, the Bank of England tried to influence the market by, for example, borrowing money in the market. Another way was to make the market rate “reflect more exactly its own Official Rate” (Sayers 1936, 49). These efforts of the bank were undermined by the fact that the relation between the bank’s rate and the supply of money was far from being clear.
Oddly enough, arguments about the need for a stronger Bank Rate policy and about the need for a bigger reserve run parallel in many of the discussions throughout this period, and there seems to have been little realization that the two lines of attack were alternatives, in the sense that a bigger reserve implied less need for a flexible Bank Rate, and more effective use of the Bank Rate made a big reserve less necessary. (Sayers 1957, 10)

It was not only the value of the rate that was important, but also its stability. A stable rate was considered to generate stability. As Patron wrote in the context of the US National Inquiry Commission:

There is something more important for a country than the figure of the discount rate, and that is the uniformity of this rate in space and in time. While it is not possible to reach absolutely fixed and uniform rates of discount and credit conditions, the nearer they are approached the nearer we are to perfection. A discount rate subject to constant change would cause, at each variation, the gravest disturbances in commercial relations. On the other hand, a stable rate allows a certain prevision of the future and is highly advantageous to serious men of business. (Patron 1910, 32-33)

Parliamentary and central banks’ officials showed pride in the stability of the Banque de France’s rate compared to other central banks. For instance, in 1897, at a House of Commons session, the minister of finance praised the fact that between January 1879 and December 1896, the Bank of France had varied its discount rate “only” eighteen times, whereas the Deutsche Bank had changed such rates forty-six times and the Bank of England 109 times.\(^\text{10}\) The informal gold standard policy of the Bank de France provided a bigger marge de manœuvre. As its Governor Rouland argued in front of the 1870 commission on monetary questions, “The example of England is not unhappy. I like France better with its double money that can avoid more easily frequent and intense monetary crises than England with its unique gold standard, which has to hike brutally its discount rate.”\(^\text{11}\)

\(^{10}\) Banque de France Archives, Chambre des députés, Séance du 3 juin 1897.

\(^{11}\) “L’exemple de l’Angleterre n’est pas heureux, et j’aime mieux la France avec sa double monnaie, échappant plus facilement à la fréquence et à l’intensité des crises monétaires, que l’Angleterre, avec son étalon d’or unique,
The Real Bill Doctrine

Since the notion of stability was constructed according to the monetary context, controlling the money supply to maintain money’s value constituted central banks’ core preoccupations. As we saw before, there were two schools of thought that had different conceptions of the money supply. While the currency school argued that the creation of money should be strictly generated by bank notes, the banking school viewed banking activities as an important generator of money. The real bill doctrine became salient when the currency school got discredited at the expense of the banking school. Although it was the currency school’s principle that was embedded in the 1844 Bank of England charter act, as the discount market grew, central banks gradually moved away from currency school principles.

A consensus around the intellectual principles of the banking school appeared across different studies produced during the 1910 US National Inquiry Commission. Paul Warburg argued that the United States should follow the example of European countries, which have a full-fledged discount system that represents the most advanced system of credit (1910, 19). The “bill of exchange,” which corresponded to a promise of payment, was at the centre of that “modern” discount system. The bills were provided by sellers and discounted by banks. They worked as some sort of postdated cheques: the buyers would usually have between 90 and 120 days to repay the bill (Kindleberger 2005, 75–77). As Warburg pointed out, a central bank had a key role to play within a discount system.

Under a central bank and discount system there are the main reserves kept by the general banks. Cash reserves are kept almost exclusively by the central bank, there available to permit the general banks to convert cash credits into actual cash whenever needed. The system is based on confident and immutable reliance by the banks on the fact that against good and legitimate bills a cash credit is always obtainable at the
courbée sous le poids écrasant des crise, et condamnée à éléver sont taux d'escompte de façon brutale” (qtd. in Flandreau 1996, 854, my translation).
central bank, and that no one will therefore needlessly withdraw or hoard cash. (Warburg 1910, 32)

The real bill doctrine increased the importance of the discount system because it was “a rule purporting to gear money to production via the short-term commercial bill of exchange … The doctrine states that money can never be excessive when issued against short-term commercial bills arising from real transactions in goods and services” (Humphrey 1982, 3). The real bill doctrine drew a line between good credit bills and bad ones, and the central banks had a key role to play in that regard. Good bills were those related to real assets (production) whereas bad ones were connected to “unreal” assets (bonds). Legitimate bills were issued in the context of commercial transactions. In that case, bills were issued to provide the time necessary to transport or sell the goods. Before the US National Monetary Commission in 1910, the Bank of England’s governor provided examples of legitimate bills. They were: “a) representing exchange transaction, b) made to carry stocks of goods or securities, c) made in anticipation of public loans” (qtd. in Hawtrey 1932, 11). As for the illegitimate bills, they were issued on debt. A case in point of a bad bill was the “accommodation bill” which was “not drawn to supply funds for the acquisition of an asset, but to make good deficiency of cash due to disappointed expectations” (Hawtrey 1932, 129).

Therefore, the real bills doctrine perceived stability as being guaranteed by the respect of some sort of moral code underlying the discount of bills.

“By means of its notes, the Bank is in a position, under all circumstances, to maintain an exact proportion between money and credit and to help the latter in precise proportion to its holdings.” Again, the perception of what ensures a stable context was very simple. The Bank had to ensure “good” money over “bad” money, as well as “productive” bills over “unproductive” bills. (Patron 1910, 35)
In a nutshell, bad bills were considered to serve speculation purposes, whereas good ones generated productive effects on the economy. Placed at the centre of the credit system, central banks had the power to influence which type of bills should be privileged.

3. The Gold Standard: A Monetary-Based Practice of Governance

The gold standard was not an automatic adjustment of the balance of payment, but was instead made of the discretionary actions of central banks. To ensure stability, central banks did not have clear guidelines and thus tried out different banking procedures. The setting of the bank rate provides a good example of the regime’s improvised nature. When central banks started to play an active role in setting the bank rate, they had the problem of making it match the market rate, which undermined the possibility of controlling money supply. They thus tried different techniques such as buying money from the market or importing gold. Systematic stabilizing procedures were undermined by the fact that the theoretical connection between the bank rate and the gold reserve still remained unclear. In fact, as Dam claims, “the gold standard rules of the game were a post World War I construct, not observed and probably not even widely recognized as relevant norms before the war” (1982, 31). Dam argues that the gold standard was a “myth,” which was best defined in the 1918 report of the Cunliffe committee in England.

When the balance of trade was unfavourable and the exchanges were adverse, it became profitable to export gold. The would-be exporter bought his gold from the Bank of England and paid for it by a cheque on his account. The Bank obtained the gold from the Issue Department in exchange for notes taken out of its banking reserve, with the result that its liabilities to depositors and its banking reserve were reduced by an equal amount, and the ratio of reserve to liabilities consequently fell. If the process was repeated sufficiently often to reduce the ratio in a degree considered dangerous, the Bank raised its rate of discount. The raising of the discount rate had the immediate effect of retaining money here which would otherwise have been remitted abroad and of attracting remittances from abroad to take advantage of the higher rate, thus checking the outflow of gold and ever reversing the stream. (qtd. in Dam 1982, 15)
However, it was not because central banks did not actively define their action within a coherent representation of an international regime that no consistent practices of central banking existed. During the gold standard period, central banks aimed to ensure stability through money management. Fixed exchange rates pegged to gold gave central banks the leverage to act on their domestic economy. Consequently, during the gold standard central banks pursued what I call a monetary-based practice of financial governance. Indeed, the gold standard period was the only period when central banks had unified rules to ensure both financial and monetary stability at the same time (Giannini 2011; Goodhart 2010). According to Goodhart, “The art of monetary management” has had two (interrelated) aspects, a macro function and responsibility relating to the direction of monetary conditions in the economy at large, and a micro function relating to the health and well-being of the (individual) members of the banking system. Until 1914 such management largely consisted of seeking to reconcile, as best as possible, the need to maintain the chosen metallic standard on the one hand with concern for the stability and well-being of the financial system, and beyond that of the economy more widely, on the other. (1988, 5)

In other words, financial stability was anchored in monetary management—a structure of knowledge that provided central banks with a central role to play. Central banks helped to ensure the smooth conduct of the domestic banking system with the help of their reserve, their monopoly on money issuing, and their special relation with the state. The gold standard period was a time of fixed currency pegged to gold. Therefore, concerns about financial governance were strongly connected to the material banking context and money convertibility. In England, for example, a situation was perceived as being potentially disruptive when the convertibility of the pound was threatened. Because law set the gold-pound convertibility ratio, the depletion of the bank’s reserve gold threatened the maintenance of convertibility. In France, bimetallism made the management of the gold reserve more flexible. Moreover, the gold-banknote ratio was not as
rigidly set. With more flexibility to manage the bank’s reserve, the Banque de France helped the Bank of England in a situation of gold shortage during the Baring Crisis and the 1907 crisis.

However, central banks’ collaboration was the exception rather than the rule. The monetary-based practice of financial governance that took place at the turn of the century was geared to the domestic context. According to Eichengreen, “The fact that central banks were generally more active in periods of gold outflows than periods of inflows reinforced the view that they were essentially concerned with covering losses of gold in order to protect their own reserves, rather than ensuring market-led adjustments of the monetary system as a whole” (Eichengreen 1992, 36).

As the example of the Bank of England and the Banque de France shows us, the monetary-based governing practice can still be considered as an international system of governance since different countries engaged in similar practices. In England and France, the central banks oversaw the banking sectors and ensured the stability of the domestic context through money convertibility. To do so, they tried to control the money supply through the real bill doctrine and the bank rate. The guarantee of convertibility helped to shape expectations and created a context where private foreign investment and trade could thrive (Dam 1982).

7. Synopsis

This chapter demonstrates how the epistemic dimension intersected with the cognitive dimension of central banking practices at the end of the nineteenth century. In the central banking community of practice in France and England, the cultural constitution of these communities remained stable throughout the nineteenth century. In each country, the central banks were run by a group of people whose rules of inclusion and exclusion were traditionally defined: new
members were for the most part co-opted by the group already in place and dedication to the
logic of the institution was expected from them. Moreover, the executive group of the two banks
enjoyed a privileged position within the countries’ elite.

From 1870 to 1914, central banks’ community of practice governed the financial
environment through what is usually referred to as the gold standard, and what I call a monetary-
based practice of governance. Using the term “monetary-based” practice of governance instead of
the gold standard allows us to highlight the historical specificity of the practice. The turn of the
twentieth century was the only period when central banks had unified rules to ensure both
financial stability and monetary stability. Accordingly, financial stability was anchored in the
management of money and credit.

As central banks started to occupy a new status within the domestic context, the community
of practice defined the policies of the bank by drawing on the knowledge available to them, that
is traditional banking procedures. While the bank had to adapt to a new role (supervising the
economy), there were no clear rules that could guide the central bankers in this enterprise—
bankers often had to improvise. For example, a major problem at the time was to match the bank
rate with the market rate. Although no sophisticated models existed and actions were often
improvised, a coherent international practice of financial stabilization still existed as both the
communities in France and England managed their domestic context drawing on similar
representations of markets. The markets were represented through the immediate material
environment of bankers, such as money, gold, and credit. Such representations also shaped what
constituted stability at the time.

Until 1914, central bankers were not “political figures” in the sense that they were not
known to the general public. But the communities at the head of the central banks were part of
the elite alongside politicians. This close entanglement between the two groups certainly led to
similar “world views.” As Cassis (1985) explained, bankers would be consulted for their “technical” knowledge. They were seen as experts for banking questions and politicians would seek their opinions for such matters. In the next two chapters, I will demonstrate how expertise came to be transformed through waves of scientization, first in the economy (chapter 5), and then in the financial domain (chapter 6). Such scientization affected the way central banks would practise governance in addition to modifying the cultural configuration of the practice community.
CHAPTER 5

FROM MONEY TO NATIONAL MARKETS: THE SCIENTIZATION OF ECONOMY
AND THE CAPITAL-FLOW-BASED PRACTICE OF GOVERNANCE

Not merely as a feature of the transition, but as a permanent arrangement, the plan accords to every member government the explicit right to control all capital movement. What used to be a heresy is now endorsed as orthodox. —John Maynard Keynes 1944

While at the end of the nineteenth century central banks geared their stabilization enterprise toward money convertibility, during the Bretton Woods period they changed their focus to restrain the expansion of capital flow. Consistent with the practice-based framework for the study of governance, this chapter investigates the epistemic and cognitive dimensions underlying the construction of what I call central banks’ capital-flow-based practice. The rise of a new representation of the economic market, which emerged through the scientization of economics, established the necessary conditions for the practice to transform. However, the rise of scientific economics only partially transformed the cultural background of the practice community. The capital-flow-based practice was a process of creatively adapting economics science. More specifically, to govern, the community of practice shared a repertoire of actions that was constituted through two types of knowledge: economic knowledge and traditional banking procedures.

Empirically, the argument stems from the Bank of England and the Federal Reserve, which were the two most influential central banks at the time. I address the epistemic change that underlaid the scientization of economics to show how the rise of scientific economy affected
representations of the economic environment and the role of financial flows within it. It created a new representation of the economic environment as a self-contained national economic market. Consensual knowledge was formed around such representations, which shifted the target of governmental intervention. By the Second World War, core actors in the governmental arena agreed on the necessity of permanent capital control—an idea that did not exist before the interwar period. I then address the cognitive dimension of central banks’ governing practice to argue that the integration of scientific expertise within the community was contested. One the one hand, the transformation of the community of practice was to some extent influenced by the rise of economic science: professional economists came to be integrated and central bankers increasingly relied on a structure that produced formal scientific knowledge. On the other hand, the community experienced idiosyncratic transformations. The interwar period witnessed the internationalization of the community of practice. Central bankers still relied on traditional ways of doing things. Finally, by looking at the actual practice of central banks governance, I show that capital-flow-based practices of governance were shaped through the creative adaptation of the scientific project. Such creative adaptation occurred through both the implementation of the Bretton Woods accord and the autonomous actions of central banks.

1. The Scientization of the Economy and the Creation of Economic National Markets

The scientization of the economy gave rise to a new way of representing it, namely, the creation of a coherent national economic market. The dawn of the scientific project in economics can be situated around 1870s (Schumpeter 1983, 11-17). It was triggered by the will to develop more “systematic” and “rigorous” economic theories. Richard T. Ely, a professor of political
economy at Johns Hopkins University, illustrates the spirit of the time in his *Introduction to Political Economy*.

The author’s experience as a teacher and a writer has convinced him that brief economic manuals have in the past done immense harm. They have conveyed little positive knowledge, but they have provided their readers with a lot of catch-words and simple “rules of thumb” for the solution of various socio-economic problems which arise in our complex modern industrial civilization. (Ely 1989, 3)

It took nearly fifty years for economics to develop into a full-fledged science. Two outbreaks in economic thinking were particularly significant for the creation of a new representation of the economy. First, in incorporating physics models and mathematics into economic analysis, economists untied the economic imagination from its anthropological reality. Second, the creation of macroeconomics reanchored the abstract conceptualization of economics into a governmentally defined reality.

**The Physics Imagination and the Mathematization of the Economic Discipline**

As a first step in economics’ scientization, a small group of economists developed theory that allowed the economic imagination to be untied from its human reality. To do so, they adopted novel ways of doing economic investigation by incorporating mathematics’ and physics’ imagination in the analysis. In the nineteenth century, most economic thinking emerged from human experience. For instance, in the background of Smith’s *Wealth of Nations*, there is an important ethical reflection on human nature and the spirit of capitalism that he had detailed in a prior book called *The Theory of Moral Sentiments*. In contrast, underlying the scientific project, there is the “liberation of science from ontology” (Mirowski 1989, 27).
The mathematization and scientization of economics worked as self-reinforcing processes. The mathematization of economics helped to externalize economic reality from its nature. To be able to mathematize a sphere of reality, it was necessary to make this reality amenable to its mathematization. “The reason mathematics ‘works’ so well in science is that it is the result of a long and arduous process of adjustment of the formalism to our contingent experience” (Mirowski 1989, 6). As a human activity, economics depends on context. In contrast, when understood in a quantitative fashion, economics ceases to be context specific. Consequently, quantification allows one to integrate different contexts that are *a priori* not related to each other.

Reliance on numbers and quantitative manipulation minimizes the need for intimate knowledge and personal trust. Quantification is well suited for communication that goes beyond the boundaries of locality and community. A highly disciplined discourse helps to produce knowledge independent of the particular people who make it. (Porter 1995, ix)

As Mirowski argues, this liberation of economy from the nature of its very being occurred when economists borrowed concepts and imagination from physics—a field that experienced its own revolution in the mid-nineteenth century. It was physics that first underwent the process of externalizing its object from the anthropological experience. This transformation catalyzed with the formulation of the “energy” concept. “[Physics] came to shift the location of fundamental theoretical status from matter and its ontological characteristics of persistence, impenetrability, and inertia, and nudged it closer to the fundamental concept of force” (Mirowski 1989, 28). In contrast to the concept of matter (substance) which is easy to understand intuitively, the concept of energy is much more abstract and involves sophisticated mathematics. It is not possible to “see” energy in the same way that it is possible to see matter. “‘Energy’ was not simply waiting to be discovered, in the way that a palaeontologist might find the first ichthyosaur … The concept had to be forged, and out of ingredients both physical and metaphysical” (Coopersmith 2010, 351). With the “discovery” of energy, physics became the ideal-type of science. The single
concept of energy allows us to explain various types of phenomenon ranging from the “drift of a smell” to the “direction of comets’ tails” (Coopersmith 2010, 352). More importantly, identifying energy led to “the conservation of energy,” whereby nothing is lost and nothing is created. With this law, it became possible to establish a coherent theoretical system about the physical world, which then opened the door to theoretical development that did not need to be grounded in the human experience of economics. Instead, theoretical development had to respect the law. Within such a constrained self-referential system, it thus became possible to measure energy and to use mathematics as the main language of the physical world.

The “discovery” of energy exemplifies the importance of mental constructions in the process of scientization. The development of physics occurred not only through experimentation, but also through metaphors. Metaphors helped to grasp a complex reality. Whereas the theoretical development of physics is often portrayed as an inductive process, deduction played an important role in the development of scientific physics. In an address given before the Institute of the History of Science in 1957, Thomas Kuhn pointed out the crucial role that deduction played in the “discovery” of the law of energy conservation. “Put bluntly, these pioneers [Colding, Helmholtz, Mayer, Mohr, and Séguin] seem to have held an idea capable of becoming conservation of energy for some time before they found evidence of it.”1 Similarly, it was first and foremost through deduction that economics became a science. Theoretical outbreaks in physics provided economists with new material to think about economics, which eventually led to the formulation of neo-classical economics. The passage from classical economy to neo-

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1 More specifically, for Khun, aside from experimental outbreaks in the electrical domain and the Industrial Revolution’s concern with engines, Naturphilosophie was the third factor underlying the discovery of the law of energy conservation. “The key tenets of Naturphilosophie were: a hostility to experimental methods; an exaltation of intuitive speculation ratified by the purported organic unity of nature; a mode of analogical reasoning in terms of polar antinomies such as mind and matter, irritability and sensibility, oxygen and hydrogen, acid and base, and so forth; and a advocacy of numerology as a legitimate research technique” (Mirowski 1989, 103).
classical economy was thus influenced by physics’ change of focus from matter to energy (Mirowski 1989).

It is the “marginal revolution,” which occurred in 1870s, that is usually considered the breaking point between classical and neoclassical economics and thus the watershed moment in the history of economic thought that signals the beginning of modern economic science.

When this revolution had run its course at the turn of the century, both the structure of economics and its methods differed sharply from the political economy of the classics. The labour theory of value was shed, and with the help of a new unifying principle there was accomplished the integration of the theories of the consumer and of the firm, as well as the integration of the theories of value and distribution, which had been only loosely connected in classical thought. (Spiegel 1971, 505)

Jevons and Walras, the two main protagonists of the marginal revolution, received some training in natural science. Whereas Jevons followed the classes of Graham and Williamson, “two pioneers in the development of atomic theory and the theory of molecular motion” (Mosselmans 2012), Walras was trained as an engineer at L’école des mines de Paris. By using their knowledge in physics, the Marginalists created the concept of marginal utility: “the marginal utility of a thing to anyone diminishes with every increase in the amount of it already has” (Marshall 1890, 168). Marginal utility did to economics what energy did to physics—it offered a new unifying principle for the discipline. In contrast to classical theory whose concepts vary from sector to sector, “marginal utility analysis created an analytical tool of general applicability to economic problems” (Schumpeter 1994, 879). Variables that a priori did not seem related could be put in relation with one another in the context of a comprehensive framework. Like what the law of conservation did to physics, marginal theory helped to establish a coherent system that opened the door to mathematical analysis. “Relationships between economic variables came to be recognized as functional ones, which relate the change of one
variable to the change of another, such as the change of the quantity demanded to the change in the demand price” (Spiegel 1971, 506).

Therefore, neoclassical theory signals the beginning of sophisticated mathematics used in economics. “Both in their correspondence and in their published work, the early neoclassical economists recognized each other as mathematical theorists first and foremost, and when they proselytized for their works, it took the format of defending the mathematical method in the context of economic theory” (Mirowski 1989, 195). This is not to say that mathematics was not used in economic theory before. For instance, Ricardo was using many numerical examples and Marx employed algebraic formulas to express non-mathematic reasoning (Schumpeter 1994, 920). What was new with neoclassical theory was how it was geared toward exclusive mathematical reasoning and formal analysis. Neoclassical economics thus draws on the ontological externalization of the economic object. Conceptually, the notion of value did not hinge on commodities anymore because it became related to utility. As such, in representing a concept of value that was independent from the material world, it became possible to create invariants, the necessary conditions for causal explanations that characterize modern scientific reasoning.

**Macroeconomics and the Anchoring of Abstract Theory in Concrete Problems**

At first, only a small group of scholars developed abstract economic theory. Calling it a marginal “revolution” would be misleading because the theory stayed within exclusive circles. “In 1912, Irving Fisher had tried to found a society dedicated to the promotion of research into quantitative and mathematical economics, and had found few takers” (Mirowski 1989, 373). Most of the academics working on the economy could not see how the very abstract knowledge
of neo-classical economy fit with their work, and mastering the mathematics underlying the new theory remained the privilege of few. At the turn of the century, the discipline of economics was still mostly practical. Economists were concerned by real-world problems instead of producing cumulative abstract theory.  

It took another “revolution” to spread scientific economics to a wider audience. The revolution appeared in the form of Keynesianism and econometrics, whose ultimate aim was to connect abstract theory with “real-world problems.” As a result, in the 1930s, a consensus crystallized around scientific economy, whose goals were articulated by Schumpeter in the first issue of *Econometrica*: “We do not impose any credo—scientific or otherwise—and we have no common credo beyond holding: first that economics is a science, and secondly, that this science has one very important quantitative aspect” (Schumpeter 1933, 5).

Keynesian theory was an important factor in making concrete problems and abstract theory compatible. In contrast with the Marginalists whose interests in economics were mainly theoretical, Keynes started from concrete problems. “All of Keynes’ major writings in economics were prompted by the economic problems of his time and constituted an attempt to develop general principles from which to derive solutions for these problems” (Spiegel 1971, 602). His practical experience in the British government combined with great knowledge of economic principles allowed him to provide expertise on important questions. For example, *The Economic Consequence of the Peace* addressed the disastrous character of the reparations that Germany had to provide to the allies after the First World War. *A Tract on Monetary Reform* questioned the appropriateness of the gold standard to which Britain returned after the First

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2 The first dictionary of economics was published by Palgrave in 1890 and was called the *Dictionary of Political Economy*.
3 Keynes started his career at the Indian Office of the British government. Later he worked at the British Treasury and was included on the board of the Bank of England.
World War. Influenced by his practical experience, Keynes developed a sophisticated theoretical apparatus that culminated in *The General Theory of Employment, Interest and Money*. Keynesian theory also contributed to developing a coherent macroeconomic model of the economy. He said, “I have called my theory a *general* theory. I mean by this that I am chiefly concerned with the behaviour of the economic system as a whole” (Keynes 1936). In contrast with neoclassical economics, whose contributions were mainly in microeconomics, Keynes helped to develop aggregate indicators of income, employment, and investment, among others. Keynesianism radically transformed the conceptualization of markets as coherent frameworks within the boundary of the nation-state.

Anyone who compared two standard textbooks on economics, one written around 1930 and the other twenty years later, could glean the prodigiousness of his influence. In the former the reader would search in vain for the systematic treatment of macroeconomics dealing with the determination of the great aggregates of income and employment. In the latter such a treatment would be accorded a prominent place coordinate with that of microeconomics perhaps overshadowing it, and there would be other far-reaching changes indicative of the influence of Keynes affecting the chapters on monetary theory, public policy, taxation, government expenditure, and international trade and finance. (Spiegel 1971, 597)

With the influence of Keynesianism, economics became a discipline that was politically useful. From this point on, governments could hinge their economic policies on economic scientific thinking.

Parallel to Keynes’s contribution, the rise of econometrics also blurred the sharp division between abstract and practical thinking. Ragnar Frish, a Norwegian economist, coined the term *econometrics* for the first time in the late 1920s with other economists, shortly after he created the Econometric Society. Irving Fisher, the society’s first president, clearly stated the theoretical aims of econometrics as “the advancement of economic theory in its relation to statistics and mathematics” and the “unification of the theoretical-quantitative and the empirical-quantitative approach” (Spiegel 1971, 647). In that sense, econometrics profited from Keynesian theory
whose key concepts were capable of being quantified and tested (Blaug 1968; Dostaler 2005; Woodford 1999). In a nutshell, in testing the correlation between different variables, econometrics helped to generate a quantified understanding of economic reality and favoured the association of standard models with quantified empirical variables.

**The Representation of the National Economic Market**

The scientization of economics deeply transformed the way we think about the economy and markets. Before, “economy” still had some connection to its Greek etymology *oikonomia* “household management.” For instance, in the same *Introduction to Political Economy* I quoted earlier, Ely points out that “political economy is, then, the housekeeping of the State, or the management of the goods in or pertaining to the State, or the management of the goods of the citizens so far as they have any public significance, which happens whenever private economies enter into reciprocal relations” (Ely 1889, 94). In contrast, the dematerialization of economic theoretical thinking and its reincorporation into “real world problems” contributed to an abstract but familiar representation of economic objects. As Breslau said, “no one has ever seen the economy or touched it except through statistical reports and the conceptual armature of macroeconomics” (2003, 380). But the word *economy* still generates in our mind something that we can understand. Everybody has a certain idea of what the “economy of Canada” is or what the sentence the “economy is performing well” implies.

By incorporating the metaphors and methods of physics into the discipline of economics, it became possible to understand the economy as something detached from its material expression but still possible to imagine. Physics not only provided the grounds, methods, and metaphors to dematerialize mathematical objects, but it also gave to economics a vocabulary that helped to
imagine abstract concepts and processes. “The terminology of the new discipline—words like equilibrium, stability, elasticity, inflation, expansion, contraction, distribution, movement, friction—was borrowed intact from physics” (Mitchell 1998, 86). But under Keynesian theory and more specifically macroeconomics, the economy came to be understood as a territorially defined reality. Macroeconomics helped to create a clear demarcation between domestic and international economy. The state of the economy within the border of the nation-state started to be measured with aggregate indicators, such as the GDP, which was first developed by Simon Kuznets in 1934. Such national aggregate measures offered a stark contrast with the concept of “national income” that had appeared in the writing of Marshall, Ricardo, and Mills, designating “the dividend to be distributed among landowners, labourers, and capitalists” (Spiegel 1971, 572). The notion of economy that we now take for granted, “referring to the structure of totality of relations of production, distribution and consumption of goods and services within a given country or region” was produced through the scientization of economy (Mitchell 1998, 84).

2. New Structure of Knowledge and the Rise of a New Governing Practice

New representations of the market created a new way to think about and perform governance. Such representations were shared by the architects of the Bretton Woods agreement. As knowledge about the object of intervention (know what) changed, knowledge about the perception of the problem (know why) and the technique of governance to manage such problems (know how) also transformed. Stability came to be associated with economic prosperity, and capital control was a key instrument to ensure such stability. To trace the boundaries of this knowledge, I look at the justifications given during the negotiations of the Bretton Woods accord, from which stemmed the infrastructure of the post-Second World War
order. Forty-four nations agreed on the document on 22 July 1944, but experts from England and the United States designed the core of the accords beforehand. Two crucial figures in these negotiations were John Maynard Keynes, the head of the British delegation, and Harry Dexter White, who led the American Delegation.4

Know Why

Despite disagreements over the form of an international organization, the two delegations shared a similar vision of the order to be constructed. Keynes’s proposition was more ambitious than the one advanced by White. It proposed an “International Clearing Union with a wide use of credit,” whereas the Americans preferred “a stabilization fund with a limited liability subscription” (Keynes 1980, 185). Both Keynes and White agreed on the basic principles of what constitutes stability and how to best ensure it. They perceived economic prosperity as the guardian of world stability, and believed that active intervention to restrain capital flow was necessary to achieve such a goal. In his first report at the treasury, White highlighted the connection between governmental intervention and prosperity: “the ultimate goal of monetary and banking legislation and policy is the promotion and maintenance of prosperity” (qtd. in Rees 1973, 55). For both Keynes and White, the free flow of capital was a threat to national autonomy because speculation would hinder the international trade system and the stability of the managed exchange rate system. “Nothing is more certain than that the movement of capital funds must be regulated” Keynes argued (1980, 31). First, capital control was considered a crucial governmental tool to preserve national autonomy over its interest rate. He argued that in a system where capital could circulate freely, the interest rate of different countries would tend to move toward equilibrium: “in my view the whole management of the domestic economy

4 For a detailed account of the negotiations see Dormael 1978; Eckes 1975; Gardner 1956; and Steil 2013.
depends upon being free to have the appropriate rate of interest without reference to the rate prevailing elsewhere in the world” (qtd. in Rees 1973, 149).

**Know How**

Keynes felt that “capital control is a corollary to economic prosperity” (Keynes 1980, 149). Consistent with the new economic principles, interest rates should be aligned with full employment objectives. Another important advantage of capital control was its capacity to impede speculation, which was seen as the main cause of the interwar instability. During the nineteenth-century gold standard, the free flows of capital from creditor to debtor countries corresponded to the allocation of credits to subdeveloped sectors. As for the post-First War period, capital ceased to move to unproductive sectors, and Keynes argued that such speculation caused further economic disruptions. “If the favourable trade balance of the US had been the only problem the newly produced gold in the rest of the world would have been more than sufficient to discharge it. The flow of refugee and speculative funds superimposed on this brought the whole system to ruin” (Keynes 1980, 30).

White held similar thoughts. In the 1930s, in a letter to Professor Taussig, he wrote:

> I am wondering whether it may be possible to develop feasible means of rendering our domestic affairs less sensitive to forcing disturbances without sacrificing either stabilizing influences of international economic relations or the gains from foreign trade. The path, I suspect, may lie in the direction of centralized control over foreign exchanges and trade. (qtd. in Rees 1973, 39)

In their vision, in controlling capital flows, governments had leverage to distinguish between speculative flows and productive flows, and governments’ responsibility was to favour the latter. The International Clearing Union that was originally advanced by Keynes was for him not only an instrument to provide liquidity to the system or to create a reserve currency, but also to
centralize capital monitoring. In the context of the discussion of the International Clearing Union, Keynes clarifies his view like this:

I share the view that central control of capital movements, both inward and outward, should be a permanent feature of the post-war system. If this is to be effective, it involves the machinery of exchange control for all transactions, even though a general open licence is given for all remittances in respect of current trade. Thus I accept in its entirety what I understand to be the conclusion of the Bank of England on this aspect of the problem. (Keynes 1980, 52)

Keynes and White also agreed on the desirability of a fixed national currency. They designed a gold standard exchange system in which the dollar became the international currency fixed to gold. The American dollar played the reserve role, and its convertibility was set at 35 dollars for an ounce of gold. In the views of its creators, the gold standard exchange system was not a return to the gold standard; it was rather a way of “locking together through a supranational standard of values the fixed parities of eventually more than a hundred national currencies” (Coombs 1976, 6).

The gold standard, as I understand it, means a system under which the external value of a national currency is rigidly tied to a fixed quantity of gold which can only honourably be broken under force majeure; and it involves a financial policy which compels the international value of the domestic currency to conform to this external value as fixed in terms of gold. On the other hand, the use of gold merely as a convenient common denominator by means of which the relative values of national currencies—these being free to change—are expressed from time to time, is obviously quite another matter. (Keynes 1980, 17)

The managed system of fixed currencies was in line with the idea of capital control because it aimed to avoid speculation on foreign exchange (Helleiner 1994; Seabrooke 2001). White’s plan aimed to avert “the disruption of foreign exchanges and the collapse of the monetary and credit systems; to assure the restoration of foreign trade; and to supply the huge volume of capital that will be needed virtually throughout the world for reconstruction, for relief, and for economic recovery” (qtd. in Rees 1973, 139).
Consensual Knowledge and the Rise of a New Governing Practice

The national economic market became an image—a representation through which it was possible to rationally define new tools of governance. A striking feature of the post-war organization in 1918 was that governmental actors could not think about alternatives to the gold standard. In contrast, after the Second World War, a consensus crystallized around the necessity for some sort of permanent capital control that had never been mentioned in the context of the First World War reconstruction negotiation.

The Cunliffe Commission on Currency and Foreign Exchange established in 1918 was a key event in the rational plans of the post-First World War governance regime because it shaped perceptions of appropriate governance until the Great Depression. The Cunliffe Commission, which was named after the governor of the Bank of England who presided over it, had the mandate “to examine the problems of the transition from war to peace and to suggest appropriate policies” (qtd. In J. Wood 2005, 286). The commission paid no attention to alternatives to the gold standard. In fact, it exclusively focused on how to restore the gold standard rather than investigating what monetary regime would be the most appropriate (Redish 1993, 786). The commission, which reunited “members from the Treasury, the City and the universities,” (J. Wood 2005, 286) associated the gold standard with the international monetary regime. “The contemporary debate revolved entirely around the choice between restoring the pre-war parity and attempting to stabilize the exchange rate at a lower parity that took account of the changed domestic and international context” (Giannini 2011, 120). Even criticism of the commission’s decisions, such Keynes’s critique in the Economic Consequences of Mr. Churchill, concerned the level of parity rather than a criticism of the gold standard per se.

In contrast, in the context of the Bretton Woods negotiation, a consensus formed around the necessity of capital controls. The creation of the national economic market created a new
way to think about governance and stability. Not only Keynes and White saw the necessity for
capital control—it was a widely shared opinion. As Arthur Bloomfield of the FRBNY wrote in
1946, “It is now highly respectable doctrine, in academic and banking circles alike, that a
substantial measure of direct control over private movements, especially of the so-called ‘hot
money’ varieties, will be desirable for most countries not only in the years immediately ahead
but also in the long run as well” (Bloomfield 1978, 687).

The Bank of England revealed itself to be an important advocate of capital control. Just
before the Second World War, the treasury was still disinclined to pursue such control, but the
governor argued that “statutory control would prove inevitable on the outbreak of war”
(Hennessy 1992, 84). During the war, opinion was still divided over whether capital control
should end with the war. When Governor Norman set up a committee to examine that question,
the committee ended up making a strong plea for the continuation of capital control. Leslie
O’Brien, a future governor of the Bank of England, nicely summarized the committee’s position
with the following words:

They regard a conscious return to the international monetary chaos of 1918/1939 or to
as system similar to that which functioned in the nineteenth century as alike impossible,
and envisage a continuation and even extension of control not merely as *pis aller* to be
dropped as soon as conditions improve but as deliberate and constructive policy
calculated to prevent a recurrence of the mass capital movements of the pre-war period
and to build up a system which will fit into a world in which exchange control will have
become the almost universal rule. (Hennessy 1992, 102)

The 1947 exchange control Act made capital control a long-term governing instrument.
Even the New York bankers were in favour of some sort of control, though they did not agree
with the idea of managed economy as the Bretton Woods’ plan advanced it. During the
negotiation, the New York bankers had developed their own plan, which was drafted by John
Williams of the Federal Reserve Bank of New York (FRBNY). The plan, called the key currency
plan, based stability in the sustainability of the two key currencies: the dollar and the pound
sterling (Eckes 1975). The private sector also kept the door open to some forms of capital control. “Even the American Bankers Association was forced to admit in 1968 that the case for free capital movements was weak, given that many such movements were speculative, unproductive, and tax-avoiding” (Helleiner 1994, 87).

In contrast with the lack of creativity of the post-First World War context, the consensus around permanent capital control shows that collective learning occurred. The very idea that central banks should control the flows of capital was fairly new. It was at the beginning of the 1920s that the principle of credit control started to be mentioned in central banks’ status. “By the end of the decade the central banks that had been established under the auspices of the League of Nations had begun to recognize that function (Giannini 2011, 10). However, the version of capital control that had been practised during the interwar period was mainly ad hoc. Steep depreciation of currencies provoked massive speculative movements, which made the discount rate policy ineffective. Central banks would then call for market restraint or try to offset the effects of speculative movements by buying or selling exchanges (Bloomfield 1978, 692). In contrast with the Bretton Woods period, capital control was thought of as an established practice that must be performed daily, and as an essential feature of any stable economic context.

The priority given to capital controls also reflected the secondary status of liberal finance in their vision of a liberal international economic order. Faced with the prospect of a liberal financial order that would disrupt stable exchange rates and an open trading system, they agreed that the former should be sacrificed to preserve the latter. (Helleiner 1994, 37)

3. The Cultural Configuration of the Community of Practice

The post-World War I period witnessed the internationalization and formalization of the community of central bankers. During the nineteenth century, as the parliamentary debates testify, central banks were aware of each other’s policies, but direct contacts were the exception
rather than the rule. This changed after the First World War, when interactions between central bankers gradually became institutionalized. The international conferences on post-war reconstruction, which took place in Brussels in 1920 and Genoa in 1922, provided the first occasion for central bank officials from different countries to start interacting and exchange their respective visions on economic post-war reconstruction. Distant at first, the contact between central bankers became more intimate with time. Governors also gradually made their voices heard. At the first post-war conference on reconstruction in Brussels, the governor of the Bank of England was not present. Lord Cullen served as the bank’s representative within the British delegation. He maintained regular contact with the governor to inform him of the conference outcomes (Sayers 1976, 153). Soon after the Brussels conference, the Bank of England’s Governor Montagu Norman was asked by the League of Nations to help sketch a plan for Austrian economic and financial reconstruction (Cotrell 1995, 87). Reminiscent of the 1922 Genoa conference, the Bank of England proceeded to an extensive review of its relations between sixteen central banks, including the Federal Reserve. The review established the basic principles of central banking that Norman wanted to push on the international agenda, such as collaboration between central banks and institutional autonomy. Moreover, the Genoa conference provided the opportunity for social exchanges between central bankers and experts from the League of Nations’ financial committee — an organization that had an important role to play in developing economic oversight (Pauly 1997).

The strong collaboration between Benjamin Strong from the FRBNY and Montagu Norman from the Bank of England helped to foster international collaboration between central banks in the early post-World War I period. Their mutual sympathy is often singled out as the main
facilitator of this collaboration. In his young age, Norman spent some time as a commercial banker in the US, which made him familiar with US commercial culture—a familiarity that was rare at the time. The two men maintained a regular correspondence and came to share a common vision regarding the role of central banking in the post-First World War economic context. According to Sayers,

> By their natures passionately public servants, both of them saw in the institutions they governed instruments for the reconstruction of a broken world economy. They believed especially that they and their opposite numbers in Europe had more chance than any politicians of guiding the peoples of the world, both nationally and internationally, in the adoption and maintenance of policies needing time and patience. (Sayers 1976, 155)

For that purpose, Norman came with the idea to establish some sort of “central banks private club.” In September 1925, he wrote to Strong “I rather hope that next summer we may be able to inaugurate a private and eclectic Central Banks’ ‘Club’, small at first, large in the future” (Toniolo 2005, 34). In that spirit, a first international meeting between central bankers was took place in July 1927 in Long Island (Cottrell 1995, 94). Organized by Strong, the meeting was attended by the governor of the Reichsbank, Schacht, Norman, and Charles Rist who was in charge of the newly created department of foreign affairs of the Banque de France (Toniolo 2005, 30-31).

Amid intensified social interactions between central bank officials, the Bank for International Settlements (BIS) was created in 1930. The Young Plan that dealt with German reparation payments was the immediate cause of the bank’s establishment, but the bank’s status provided the institution with a much larger mandate: “to promote the co-operation of central banks and to provide additional facilities for international financial settlements entrusted to it under agreements with the parties concerned” (Toniolo 2005, 48). With the establishment of the

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5 See, for example, Ahamed 2009; Cottrell 1995; and Sayers 1976.
BIS, social interactions between central bankers became more institutionalized. The monthly meetings in Basel provided a casual context for central bankers to exchange views on various subjects. The BIS therefore helped to create a sense of we-ness between central bankers, which was maintained over time. Moreover, the BIS provided a forum for central bankers to find some sort of comfort with each other. For instance, in 1960s, Louis Raminsky, governor of the Bank of Canada, “found the meetings were not only ‘an invariable source of pleasure’ but ‘served a therapeutic purpose’ as well” (Toniolo 2005, 365). Even when the IMF was established, the political centres for central bankers remained at the BIS. The BIS had the advantage over the IMF of providing a place where they “can meet without the benefit of the presence of people from the Department of Finance” (Muirhead 1999, 236). In fact, even nowadays, the BIS is a very secretive institution. No minutes of BIS meetings are recorded. Accordingly, the BIS became an institution where central bankers could create policies in their own way.

Monthly meetings at the BIS also favoured the creation of shared knowledge between central bank officials who would often arrive at the bank with a certain vision and leave with another. In reporting the words of an occasional US observer of the BIS meeting during the 1930s, Toniolo highlights how it helped central bankers to see their reality within a broader context.

These people have been concerned with their own problems without regard for the right of anyone else. As they sat down around the table for two days you could almost see their point of view change as they began to realize the effects of their own actions … The greatest use of the BIS is not in the specific action it may take but in the opportunity, which it may afford for the gathering together of these central bank people and the development, as it were, of social pressure upon them to appreciate the problems of other countries. (Toniolo 2005, 199)
The Influence of Scientific Economics

The scientization of economics generated cultural and institutional changes that were not limited to central banks, but concerned the whole state apparatus. Socially, the rise of scientific knowledge privileged knowledge that could be mastered by only a limited group of people—professional economists. In parallel, the creation of new knowledge opened new possibilities for governance, which also created institutional positions for professional economists. As Fourcade argues, sociological change, epistemic change, and governmental change were self-enforcing processes.⁶

Economics has become more central to the nation (as evidenced by its growing place in the university curriculum) because the nation itself has become more economics: over the course of the twentieth century, acting upon the economy became increasingly legitimate practice, carried out by ever more specialized experts. Indeed, the worldwide expansion of economics relied first and foremost on the ideas, institutionalized broadly in the post-war period, that economic development and growth can be engineered, or that poorly performing economies can be fixed. In the process of institutionalization of an intellectual object called “the economy,” the latter was socially constructed so that “experts” could claim analytical and tutelary power over it. (Fourcade 2006, 162–63)

As economics became anchored in the state governing apparatus, economics professionals also gained preeminent roles within the national governmental bureaucracy. But up until the First World War, professional economists were absent from the state apparatus. As Sir John Anderson said in 1947, “Up to the beginning of the first European War, the idea of employing professional economists in the business of government in any sphere seemed hardly to have occurred to anyone” (qtd. in Howson and Winch 1977, 5). Economists would play the role of advisers, like David Ricardo in the 1810 Bullion Committee, but they would not hold permanent positions within the state bureaucracy. In the United States, “the first regular posts earmarked specifically for ‘economist’ in the bureaucratic establishment were created with the formation of a Bureau of

⁶ For a detailed account of the process of the institutionalization of economists in the US, France, and England, see Fourcade 2009.
Agricultural Economics within the Department of Agriculture in 1922” (Coats 1981, 177). As the number of economists rose in public administration, economics expertise became increasingly used to solve political problems, which further justified the presence of economists.

Changes that occurred in the state apparatus also translated at the Federal Reserve and the Bank of England, though how professional economists were integrated within the two institutions differed. The presence of professional economists was more salient at the Federal Reserve than at the Bank of England. At the Bank of England, the position of economic adviser was created by Montagu Norman in 1928, but it was only in 1933 that the first professional economist was hired for a permanent position. Humphrey Mynors, who came from Cambridge, became head of the statistical section that was renamed the “Economics and Statistical Section” upon his arrival (J. Wood 2005, 281). Keynes himself was included on the Bank of England’s board and became director between 1941 and 1946. At the Federal Reserve, the integration of economists came earlier. In fact, one economist was already involved in the founding of the Federal Reserve in 1913. Professional economists quickly became an important part of the staff’s bank at the Federal Reserve. “During the 1930s and 1940s Federal Reserve economists included Emile Despres, Evsey Domar, James Duesenberry, Alexander Gerschenkron, Gottfried Haberler, Albert Hirschman, Lloyd Metzler, Richard Musgrave, and Alan Sweezy” (Nelson 1987, 81).

As for the Bank of England, professionally trained economists remained the exception rather than the rule—a situation that the bank decided to change in 1948 (Capie 2010, 51). Despite the low number of professional economists, the Bank of England could still count on a group of professionals who could master formal economic knowledge. As Fourcade puts it, “British economists also firmly supported the development of statistics in their country, which they considered to be an integral part of their scientific mission. In fact, there was little demarcation between the social. Not a lot of distinction between the worlds of economists and
statisticians until after 1945” (Fourcade 2009, 150). Not many professional economists were hired because the bank favoured the development of pragmatic economic expertise. But through their experience at the bank, many people developed economic expertise that was more empirically driven than their academic counterparts had. “Like the clearing banks, the Bank operated an internal labour market” (Capie 2010, 52). The opportunities were there for young clerks to climb the ladder of the bank hierarchy.

Different reasons can explain why professional economists played a bigger role at the Federal Reserve than at the Bank of England. First, in contrast to the Bank of England which was old and traditional, the Federal Reserve was a new institution. The Federal Reserve had been created to modernize the American credit system. As a result, the institutional culture at the Federal Reserve was more open to innovation than the Bank of England. The higher percentage of professional economists at the Federal Reserve was also related to the different ways formal economics science was institutionalized in both countries. As Fourcade explains, “professionalized social science in the US emerged simultaneously with professionalized civil service. Consequently, economics was not much constrained by the process of state-building: rather, it was part of it” (Fourcade 2009, 61). Economics knowledge was geared toward technical problems, and developed in conjunction with professional civil service, and economics departments, which guaranteed the field’s integrity (Fourcade 2009). In England, on the other hand, economists perceived themselves as enlightened intellectuals. Accordingly, they developed knowledge geared to the general good of society, “but remained reluctant to cast their role in purely technical terms” (Fourcade 2009, 184). In England, there was thus a sharper division between knowledge production in universities and state bureaucracies than in the United States.

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7 See chapter 3 for more details.
The rise of scientific knowledge not only translated at the social level with the increase of professional economists, but also at the institutional level with the development of statistics and research departments in central banks. The Bank of England did not have any formal bureaucratic section for the production of statistics before August 1921, the date when an economics division was created within the Chief Cashier’s Office. The department “was responsible for producing charts and tables of figures required by the Governors and senior officials” (Hennessy 1992, 314). In 1922, it also started to produce a monthly report with statistics related to various aspects of the British economy and banking sectors. Originally in circulation only inside the bank, the monthly reports were distributed to the public a few years later. The development of statistics production and the incorporation of professional economists were mutually enforcing processes. When the economist Mynors arrived at the bank, the circulation of the reports reached 1,700 copies compared to the original production of 450 (Hennessy 1992, 316).

In addition to the production of its own statistics departments, the Bank of England relied on statistics and research at the BIS. In the 1930s, the BIS was reorganized to give more importance to research. The Monetary and Economic department, which took the place of the Central Banking Department, became a hub for international economic research and the BIS started to issue its own annual reports. While the League of Nations pioneered international economic oversight (Pauly 1997), the research at the BIS quickly became a reference for central banks. Keynes praised the BIS annual report as the “leading authority for certain statistics not easily obtainable” (qtd. in Toniolo 2005, 194). He considered these statistics “vitaly important,” since “it is so difficult for the outsider to obtain in any reliable or comprehensive form” (Toniolo 2005, 194).

Research played an important role at the Federal Reserve from its early days. “From the 1920s on, the system encouraged research on monetary theory, banking and aggregate
economics. At first, researchers concentrated on developing data series useful for judging the current position of the financial and economic system … The Board’s research staff took a leading role in developing large, econometric models of the economy” (Meltzer 2010b, 27). The presence of economists, such as Lauchlin Currie, speaks of the bank’s active intellectual environment. Lauchlin Currie had worked at Harvard in the treasury before being brought to the “Fed” by Marriner Eccles—its first chairman. At the treasury he was part of what was called the “freshman brain trust.” This brain trust had been put together by professor Viner when Treasury Secretary Morgenthau asked him to assemble “the best young brains he could find in the fields of monetary theory, public finance, and banking legislation, give them an absolutely free rein and see what they could come up with” (Sandilands 1990, 56). This group also included Harry Dexter White. Currie was an important proponent of Keynesian theory and continued to produce economic expertise while working at the Federal Reserve. He used his position as an assistant director of research and statistics for the Federal Reserve to produce analyses that looked at how fiscal policy could be used to stimulate full employment (Jones 1980, 303).

A Community of Practice: Between Tradition and Expertise

The community of practice that evolved during the gold standard era underwent two major changes during the interwar period: 1) the internalization of the community and 2) the development of an institutional structure that included economic expertise. The criteria defining who was most competent to hold the highest position within central banks were comparable to those of the nineteenth century. Whereas professional economists started to hold important positions at the bank, access to top positions remained closed to them for some time. For instance, Cobbold, who was the governor of the Bank of England between 1946 and 1961, considered that a future governor was “a person with considerable practical experience of
business and finance in the commercial field” (qtd. in Capie 2010, 45). Central banks’ twentieth-century governors shared a similar background to those of the previous century. Both in the United States and England, governors came from the commercial and financial elites of the country. At the Bank of England, Lord Cobbold and his successor George Baring personified this traditional elite that had held top executive positions. They were both educated at Eton and Cambridge. They also had worked in the banking sector before joining the bank. Cobbold worked at an English bank in Milan, while Baring occupied a clerk position in the prestigious bank founded by one of his ancestors. As for Cobbold’s family, it had been involved in breweries and banking.

Like the governors of the Bank of England, the chairmen of the Federal Reserve did not have a background in economics but rather practical experience in banking—like the backgrounds of Marriner Eccles and William Martin who were the two governors in office during most of the Bretton Woods period. Marriner Eccles was an influential banker. William Martin had a degree in English and Latin and a rich experience in various aspects of finance, such as being the president of the New York Stock Exchange. It was only in 1971 with the nomination of Arthur Burns that the first trained economist became the chair of the Federal Reserve. Prior to his nomination, Arthur Burns had been a professor at Columbia and the head of the National Bureau of Economic Research (Axilrod 2011, 58).

The community of practice’s relation with scientific finance was ambivalent. One the one hand, governors of the Bank of England adhered to the representations of a national economic market, which developed in the context of the scientization of economics. Statistics were produced according to the national market’s representation. Increasingly, to make decisions, governors relied on institutional structures that produced formal knowledge. The European central bankers’ monthly BIS trips were motivated not only by the cozy context provided by the
setting, but also by the presence of a specialized staff that could provide economic expertise (Toniolo 2005, 197). At the Federal Reserve, “staff helps to set the agenda for Board meetings, makes presentations of forecasts and provides other basic economic analyses to the Board. It also engages in discussion with Board members concerning factual and technical economic questions raised” (Nelson 1987, 81). Governors Eccles and Martin both supported the Bretton Woods principles, and contributed to the diffusion of Keynesian ideas through their hiring policies. By the 1960s, the principles of Keynesianism came to be shared by most of the Federal Reserve staff. New staff with degrees in economics and trained in the Keynesian tradition gradually replaced the staff that was hired during the interwar period (Meltzer 2010b).

On the other hand, the legitimacy of economic experts to define central banks’ governance remained contested. At the Bank of England, the integration of economists did occur with some resistance. Mynors, in the context of an obituary he wrote for himself, commented on the bank’s reluctance to include economists in its structure. In his words:

In 1933 the Bank of England were anxious to defend themselves more adequately against the assault of professional economists whom they neither understood nor respected and were casting around for one of the tribe who had not yet committed the indiscretion of expressing in published work any point of view. Mr. Mynors accordingly entered the service of the Bank and after five years in the Statistics Office became Secretary in 1939 and Adviser in 1944. In 1949 he was appointed to the Court of Directors and became a full-time Director with special responsibility for staff questions. (qtd. in Capie 2010, 33)

After the war, the bank proved to be more open to the inclusion of professional economists. They hired Richard Allen, an economist from the London School of Economics (LSE) who was working as an assistant director of research at the IMF, and John Fforde who was a fellow at Nuffield College Oxford (Capie 2010, 51). It was only in the 1970s that the Bank of England established a bureaucratic structure geared toward the production of research. The structure was
called the Economic Section and gathered twenty to thirty graduates in economy or econometrics (Dow 2013, 8).

Its work consisted mainly of monitoring and reporting on current developments in the UK economy; conjectural forecasting and policy simulation using large econometric models of the UK economy, recently imported from the London Business School but being developed by Bank economists; and the research needed to underpin these activities and inform policy advice. (Dow 2013, 8)

Although the Federal Reserve integrated the role of professional economists more quickly, its chairman’s decision-making style relied more on “gut feelings” than on formal analysis and indicators. Chairman Martin was praised for “his sensitivity to market psychology” (Axilrod 2011, 26). He acquired such sensitivity through his experience in the private sector and the numerous relations he maintained with key decision makers. Martin’s views on economics exemplify the Federal Reserve’s ambivalence toward economics. Observers reported contradictory comments on Martin’s relation to economics. Axilrod recalls “hearing him express some faith—he did have moments of naiveté—that economists in the future might come to rival the growing ability at the time of engineers for precision in rocket guidance” (Axilrod 2011, 52). However, Meltzer affirms that Martin “had little interest in economic theory of its application” (Meltzer 2010, 6).

3. Controlling Capital Flows: The Creative Adaptation of the Scientific Project

Representational and cultural changes affected the fundamental nature of the relation between market and authority. The context of intervention changed as new representations of the market arose through the scientization of economics. After the Second World War, the community of practice’s relation to the scientific project was ambivalent. On one hand, the community shared the representations of a self-contained national market and increasingly relied
on social and institutional structures that incorporated scientific finance. On the other, they remained bound to traditional procedures and were skeptical of decision making based on formal knowledge. Such ambivalence opened a cognitive space for the creative adaptation of the scientific project. With the capital-flow-based practice of financial governance, central banks came to play a new role in the overall economy and performed economic stability differently. Central banks’ governance was partly defined by the Bretton Woods accord and partly defined autonomously.

The Incorporation of the Bretton Woods Accords in Central Banks’ Practice

One of the core objectives of the Bretton Woods accord was to preserve national autonomy over domestic policy. Accordingly, central banks became institutionally more connected to elected state representatives than during the gold standard regime. Central banks had to collaborate with the government to achieve the state’s macroeconomic objectives. The terms of this collaboration and the degree of central banks’ subordination took different forms in different countries. In the United States, for most of the period, the Federal Reserve was not completely subordinated to the treasury, and had some independence in its discount rate. In 1951, an accord with the treasury ended a nine-year period during which the Federal Reserve had to consult the treasury before changing its interest rate (Meltzer 2010, 41). Such institutional bounds had been instituted to put monetary policy at the service of the national debt. With the 1951 accord, the Federal Reserve regained autonomy for establishing its interest rate. But the end of this institutional binding did not mean that the Fed acted entirely in an autonomous fashion. In fact, collaboration with the treasury was the rule rather than the exception. The employment act that
was passed in 1946 brought the action of the Federal Reserve in line with its objectives, namely “to promote maximum employment, production, and purchasing power” (Rabin 2001, 344). The provisions in the act did not include specific instructions for the Federal Reserve, though the Federal Reserve still held to its principles. For instance, Sproul, the New York Federal Reserve’s president, specifically pointed out the importance of the act in defining the Federal Reserve’s policy in an address given before the joint meeting of the American Finance Association and the American Economic Association: “We must be alert to oppose both inflationary and deflationary pressures, either one of which can upset the precarious balance of a high-employment, high-production, high-income economy” (qtd. in Mehrling 2011, 56). To achieve those goals, coordination with the government was necessary. In the 1950s, the chairman of the Federal Reserve—William McChesney Martin—held weekly meetings with the treasury secretary in addition to maintaining regular contact with the council of economic advisers (Meltzer 2010b, 88).

In England, the bank was nationalized by legislation just after the Second World War. The 1946 Bank of England Act aimed to “bring the capital stock of the Bank of England into public ownership and bring the Bank under public control, to make provision with respect to the relations between the Treasury, the Bank of England, and other banks and for purposes connected with the matter aforesaid” (Bank of England 2014). Moreover, the Bank of England’s interest policy had to be aligned with fiscal policy. The Radcliffe Report, which reviewed the financial system, confirmed that the bank’s fundamental task should be debt management (J. Wood 2005, 299). During that period, the bank’s role was usually depicted as having been reduced to mere technical tasks, such as “operations in securities to enforce the Treasury’s interest targets, supervision of an inconvertible currency, and controls on bank advances (private loans)” (J. Wood 2005, 299). But the bank’s relation with the treasury was not merely
compulsory. Because tensions could arise between the governor and the Chancellor of the Exchequer, decisions at the treasury were often made collaboratively with the Bank of England (Fforde 1992, 404). In the case of the 1947 Exchange Control Act for instance, Hennessy affirms that “the Bank had much say in the wording of the Act and was consulted by the Treasury at every stage” (Hennessy 1992, 110).

Because of their central role in the monetary market and banking regulation, central banks were playing an active role in the control of capital. In England, the practice of control had been sharpened during the Second World War and formalized by the Exchange Control Act of 1947. The treasury designed the act with constant consultation from the Bank of England which played the role of administrator. “From the beginning, the Bank had made it clear that its involvement with exchange control would be almost entirely technical and monetary in scope; it would administer the country’s gold and foreign exchange reserves and act as the agent of the Treasury” (Hennessy 1992, 84). The main task of the bank was to issue notices that authorized investment abroad (Cairncross 1973, 74). Moreover, English citizens also applied to exchange money for their trips in foreign countries. It was the Exchange Control Office within the bank that dealt with most of the administrative staff. The bank tried to keep the bureaucracy as small as possible: “Staff numbers fell from a peak of 1,634 in the half-year ended August 1950 to 843 by October 1956” (Hennessy 1992, 122).

In contrast to England, the US did not put in place a permanent legal framework for capital account control (OECD 1993, 18). Unlike most countries at the time, the US did not practise exchange control, but rather exercised control on US acquisition of foreign assets. Capital control came by the mid-1960s and was essentially geared to improving the balance of payment by limiting the outflow of capital. The Interest Equalization Tax, which was voted in 1964, was the first measure to control the outflow of capital. In simple terms, the Interest Equalization Tax
was a tax on foreign investments. In 1965, the US instituted a voluntary credit restraint program geared to limiting banking flows and direct investment abroad (Cairncross 1973, 40). Since the Interest Equalization Tax targeted long-term capital flows, the voluntary program to restrain credit was more ambitious because it also encompassed short-term capital flows. In 1968, the voluntary program became mandatory. Even though the Federal Reserve had not been directly given the task to administer credit control like the Bank of England, it still played a central role because of its direct connections with the banking system. For instance, in June 1969, “the Federal Reserve Board warned banks not to solicit or accept deposits at foreign branches from US residents for purposes unconnected with foreign or international transactions” (Cairncross 1973, 41). Moreover, the Federal Reserve constrained banking lending through regulation Q. Promulgated by the Federal Reserve after the Great Depression, regulation Q imposed a cap on the interest rates on commercial deposits and lending. As Cooper argues, regulation Q as well as the Interest Equalization Tax “represented an attempt to preserve a separate identity for the domestic securities market from the international market” (1965, 469). Such actions consolidate the inside/outside representation of the market that had been created in the process of economic scientization.

The Autonomous Governance of Central Banks

With the Bretton Woods agreements, central banks became the technical executive body of policies defined at the legislative level. Yet central banks were more than the mere agent of the state. Even though most central banks were nationalized, they preserved the autonomous and discretionary power that characterized their authority (as I argued in chapter 3). The system that
was established hinged on governmental intervention defined by the Bretton Woods accord. However, with time some weaknesses started to appear and central banks’ hybrid status positioned them in the privileged position to stabilize the turbulent elements. The memoir of Charles Coombs, who was the manager of the Federal Reserve operations in the foreign exchange markets at the time, provides an insider’s perspective on central banks’ initiatives. He points out that central banks were well-positioned to see market troubles first. “Within the councils of government, the central banks were generally first to sound the alarm when currency troubles developed on the foreign front ”(Coombs 1976, xii). They used this discretionary power for “gradually reforming BW [Bretton Woods] by phasing out gold settlements and substituting a comprehensive range of credit facilities for settling payments imbalances among the major trading unions” (Coombs 1976, ix).

Capital control and pegged exchange rates contributed to the formation of a financial system that was not prone to crisis because of the reduced amount of capital flow (Eichengreen and Bordo 2003). But under the Bretton Woods system, two markets showed signs of vulnerability: the gold market and the foreign exchange market (Strange 1976). Central banks’ actions helped to deal with these vulnerabilities and kept the system afloat. With the Bretton Woods agreement, it was originally the IMF that was supposed to oversee the international monetary order. The fund was not an international central bank as Keynes originally proposed, but an international institution with a pool of money devoted to dealing with balance-of-payment problems. But already at the end of the 1950s, the fund was starting to be perceived as inadequate. As Coombs observed,

Many theoretical possibilities existed of drastically amending the Articles of Agreement of the International Monetary Fund so as to deal with the problem. But, rightly or wrongly, my judgment, and that of others, was that such sweeping reforms of Bretton Woods, probably requiring many months if not years, could not be
negotiated without precipitating a major crisis in the exchange markets. (Coombs 1976, ix)

Central banks advanced many initiatives to ensure the stability of gold and foreign exchange markets. Because central bankers were gathering every month at the BIS, the institution offered the perfect setting for central banks’ collaborative enterprises (Toniolo 2005). Coombs, who went to those meetings between 1961 and 1975, pointed out that “those central bank meetings in Basel became the focal point during the decade of the sixties of a major cooperative effort to keep the world financial system functioning effectively in the face of threatening disintegration” (Coombs 1976, viii). The BIS meeting served as the place to organize pragmatic solutions to unfolding problems (Strange 1976). Two important central bank initiatives were the creation of the Gold Pool as an answer to the gold problem, and the Swap Market to solve weaknesses in the foreign exchange market.

**The Gold Pool.** The Gold Pool was one of the main initiatives undertaken by central banks to stabilize the gold market. It was a response to a problem of confidence regarding the US’s ability to deliver gold on demand. This confidence started to erode as the private gold market grew and challenged the official price of $35 for an ounce of gold. In March 1954, the London gold market reopened and facilitated the growth of the private trading of gold. The market became so important that the price of gold within it came to be considered the real price, which created a problem when the price became higher than the official one. The issue was raised at the BIS meeting of November 1960 because the price of gold had risen to $40 per ounce. During the meeting, the governor of the Banque de France mentioned for the first time the idea that central banks could intervene to put the price down (Toniolo 2005, 375). One year later, the gold pool took shape.
The plan was designed by the Americans and accepted by other European central banks. They agreed to give the plan a trial period of one month when central banks had to refrain from buying gold from the London market (Toniolo 2005, 377–78). The overall objective was to avoid the price of gold going up to $35.20, which corresponded to the price of London gold delivered to New York (Coombs 1976, 63). After a trial period and positive experiences, it was decided that the fund would not only sell gold but also purchase it. The gold pool also became an institutionalized practice.

The running of the Gold Pool quickly settled into a routine pattern. The day-to-day operational decisions were left to the Bank of England as the Pool’s agent in the London market. The Bank of England reported on a monthly basis to a group of experts from the participating central banks, who met at the BIS at regular intervals. (Toniolo 2005, 378)

Originally, agreements of the Gold Pool remained secret (Coombs 1976, 63). “Faced with continuous leaks to the press about its activity, the Gold Pool finally adopted a more relaxed communication strategy, culminating in the publication of a fairly detailed account of its operation in the Bank of England’s Quarterly Bulletin in March 1964” (Toniolo 2005, 381). Knowing that central banks wanted to keep the price of gold at $35.20, speculators became less likely to bet on the rise of the price of gold. The Gold Pool lasted eight years, during which the price of gold on the private London market remained stable. Toward the end, stabilizing the price of gold became more costly. Because central banks did not wish to see their reserve depleted, the plan was abandoned.

**The Swap Market.** In addition to intervening in the gold market, central banks took actions in the foreign exchange market. A network of swap arrangements became the principal instruments to solve currency problems. As in the gold pool, the swap system was an initiative of the United States and aimed to replace the action of revaluing or devaluing a currency. Such actions were allowed by the Bretton Wood system, but were politically costly. The revaluation of
the Deutsch mark in 1960 took place amid tensions among central bankers. In contrast, the principle of a swap could mobilize the monetary power of central banks in a more subtle way.

In essence, a currency swap was a bilateral agreement whereby one central bank opened in its books an account in its own (or occasionally in a third) currency on behalf of the other central bank and vice versa … Usually swap agreements were limited in time (generally for three months) in order to contain exchange risks and to avoid immobilizing reserves for too long. If, at the end of the agreed duration of the swap, no use had been made of it, it was either cancelled or put on standby for later reactivation. (Toniolo 2005, 386–87)

In 1961, the Open Market Committee of the Federal Reserve charged the FRBNY with undertaking swap transactions (Strange 1976, 80). “The primary objective of Federal Reserve foreign exchange operations, as expressed in the Committee’s authorization of February 13, 1962, was ‘to help safeguard the value of the dollar in the international exchange market’”(Coombs 1976, 73). According to Coombs, there were many technical advantages to entrust the FRBNY to do the swap transactions. The staff of central banks changed less frequently than the staff of finance ministries and the Fed’s monetary capacity was far beyond that of the treasury. In its capacity as a money-creating institution, the Federal Reserve could raise almost unlimited financial capacity whereas the treasury was confined to a $330 million stabilization fund unless Congress decided otherwise (Coombs 1976, 71). The first swap arrangement was made with the Bank of France. A network of swaps linking the FDRNY with more than twelve central banks and the BIS quickly developed. Between 1962 and 1969, the total amount grew from $2 billion to $10 billion (Toniolo 2005, 388).
4. Synopsis

The chapter discusses the epistemic and cognitive dynamics underpinning the establishment of the governing practice of the post-Second World War period. More specifically, it addresses central banks’ shift from a monetary-based governing practice to a capital-flow one.

The scientization of economics changed the structure of knowledge available to represent the economic environment. Standards modeling in economics gave rise to the representation of the “national market,” which opened up new governing opportunities. During the Bretton Woods regime, central banks assured national autonomy over macroeconomic policies by restraining capital flows.

Yet, the transformative effect of new markets representation on central banks’ governing practice was not automatic. Change was mediated through the practice community of central bankers. The cultural disposition of the community of practice changed in two ways. First, by the end of the 1930s, central bankers of various nations became integrated into an international community. Second, central bankers increasingly relied on economics expertise. Yet, the sociological background of the individuals forming the community remained the same as during the nineteenth century: central bankers came from traditional banking and commercial elites. Consequently, central bankers adopted an ambiguous position towards economic knowledge. On the one hand, they started to base their decisions on institutions that gradually developed the production of formal expertise in economics, and on the other they continued to value traditional expertise. Consequently, the capital-flows based practice has been shaped through the creative adaptation of scientific knowledge.

As such, this chapter also implicitly addresses the distinction between practical and representational knowledge (Pouliot 2008). It demonstrates that practical and representational knowledge are not mutually exclusive and are both articulated through practice. The scientific
representation of national economy gradually became incorporated into the community’s background knowledge. At the same time, the community of practice did not consider the scientific economic project as being entirely legitimate. Central bankers engaged, but remained critical of, economic expertise. As central banks’ objectives were defined by elected state authority and according to the Bretton Woods principles, central banks also used their discretionary power to ensure the smooth conduct of the system. Among others, central bankers instituted the gold pool and a swap system of currencies to stabilise the gold market and the foreign currency markets respectively.
The post-Bretton Woods period has been considered “the era of central banks” (Patat 2003). By the 1990s, most of the world’s central banks acquired statutory independence from the state, which provided them with the full ability to set their own interest rates. They began to set precise inflation rate targets and geared their actions toward price stability. According to Polillo and Guillén, “the idea of an independent central bank matches the technocratic ethos of the neoliberal paradigm, with its purportedly objective, nonpartisan, disinterested, and depoliticized approach to policy making” (2005, 1768). This technical ethos was confirmed with the creation of the European Central Bank (ECB) in 1998, a supranational unelected governing body given authority to control the monetary policy of its European member states.

Although central banks’ authority in the post-Bretton Woods context has interested political scientists to a greater extent than in preceding periods, political scientists have turned their attention almost exclusively to monetary policy and the international monetary regime.\(^1\) In contrast, this chapter investigates central banks’ authority in financial stability. It takes as a starting point the fact that policy reforms of the last thirty years correspond to a “transformation” of financial regulation rather than a retreat.\(^2\) Deregulation occurred simultaneously with re-regulation. As capital control and the pegged exchange rate were abolished, prudential regulation started to thrive. In a nutshell, during the 1980s and 1990s, central banks’ governing practices transformed: central banks shifted from a capital-flow-based governing practice to a standards-

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\(^1\) See, for example, Hall 2008; Holmes 2014; and McNamara 2002a; 2002b.

based one. “International standards are referred to alternatively as codes, principles, good regulatory practices, and recommendations” (Fratianii and Pattison 2002, 183). A standard-based regulation corresponds to a type of regulation that is mainly technical and non-interventionist.

The transformation of governing practice was anchored to the changed representation of financial markets and the cultural reconfiguration of the community of central bankers. It was the rise of scientific finance that established the conditions of possibility for representational and cultural change to occur. The scientisation of finance contributed to detangle the object of finance from its anthropologic reality. It gave rise to the very idea of “financial market.” Incorporating a new epistemic reality regarding the object of finance into the central banks’ practice was a two-dimensional process. First, in representing market differently, conceptualisations of stability problems and governing purpose transform. Gradually, financial stability governance came to be understood as risk management. Representational change translated into concrete material changes, namely the reorganization of central banks’ structure and the creation of standard-issuing bodies. Second, the symbolic change in what made up legitimate knowledge transformed criteria of competence and credibility, which define who can legitimately act. The community of practice internalized the inferiority of traditional regulation knowledge and scientific expertise became an important asset for social inclusion within the community.

By examining central banks’ governing endeavours in the post-1980s context, we can also assess the extent to which reforms undertaken in the aftermath of the 2008 financial crisis represent a change in global governance. I argue that post-2008 regulative reforms reinforced central banks’ post-Bretton Woods governing practice rather than transforming the regulative system. The reforms that were undertaken in Europe reinforced the idea of a self-contained financial market and financial stability.
The analysis of this chapter draws on three types of sources. First, it relies on official documents issued by the BIS, the Bank of England, and the ECB, such as annual report and studies. I also drew on interviews conducted between March and May 2013 and April 2015, with people who are directly or indirectly involved in central banking in Paris, Basel, Frankfurt, London, and Copenhagen. I interviewed market regulators, prominent scholars, former central bank governors, and people working in various central banks’ directories such as Open-market Operations, Financial Stability Departments, and Special Resolution Units. I also used secondary sources in the field of philosophy and history of science, as well as political economy studies on central banking and prudential regulation.

1. The Scientization of Finance and the Creation of the Financial Market

Thirty years after the rise of economic science, finance underwent a revolution that transformed the field into a full-fledged science. Prior to the 1960s, the discipline of finance was what Richard Whitley calls “Business Finance” (1986a; 1986b). The discipline of finance did not have any theoretical models for predictions: “the discipline’s teaching was a mix of common sense, judgment, and tradition that had strikingly little to do with economics” (Fox 2009, 77). Professors of finance were practitioners rather than academics. “Instructors did not generally seek to create new knowledge but rather concentrated on teaching current ‘best’ management practice” (Whitley 1986a, 149). Finance students were learning the banking system and investment techniques. Sophisticated mathematics were not part of the academic curriculum. Therefore, the theory of finance was mainly practical. Investment strategies were simple, and flair was more important than education. Peter Bernstein said of his own experience in the business at the beginning of the 1950s, “we joked that we were nothing more than social workers to the rich—
but skilled social workers to the rich, confident that our performance was being measured in human satisfaction rather than in comparative rates of return” (2005, 10).

Starting in the 1960s, business finance gradually became more sophisticated and transformed into modern financial theory. Financial theories became more abstract, and standard models started to be developed. As a result, the language underlying financial thought moved away from descriptions of investment practices and simple numbers and got closer to sophisticated mathematics. Consequently, finance became privileged knowledge that could be mastered by a limited group of people. For instance, The *Journal of Finance*, which was originally read by a wide audience, was consulted by only a specialized readership.

**The Ideas that Changed the Field**

Three theories have been particularly influential in turning financial theory into scientific finance: 1) the random walk, 2) portfolio selection theory, and 3) the Modigliani and Miller theorem. Whereas the portfolio theory and the Modigliani and Miller theorem are products of the post-Second World War period, the random walk goes back to the beginning of the twentieth century. The random walk proposition is “the idea that the movements in the prices of financial securities are in some sense random—and therefore that the mathematical theory of probability can be applied to them” (MacKenzie 2008, 57). The first theorist who tackled the random walk was the French mathematician Louis Bachelier. By studying the price fluctuations of the French stock market, he reached the conclusion that price movements did not reflect the various events that were likely to influence fluctuations (Walter 1996, 875). He thus said that the best estimate of the future price of an item was its present value, and proposed using the Bell curve to provide a probabilistic estimate of change in a given price. However, Bachelier’s idea did not have much
impact at the time. It was only when several economists, such as Samuelson, revisited the idea in the 1950s and developed it further that the random walk idea was fully incorporated into financial theory. The parallel formulation of other theories allowed for Bachelier’s idea getting incorporated into a coherent intellectual framework—scientific finance.

A second theory that transformed the field of finance was the theory of portfolio selection, which was originally developed by Markowitz in an article published in the *Journal of Finance* in 1952. The idea was simple but at odds with investment practices of the time. Before the portfolio selection theory, investors usually put money in promising stocks and held their investment. For example, Johns Maynard Keynes, who managed financial assets like the endowment funds of King’s College at Cambridge, considered that concentration was better than diversification (Bernstein 2005, 48). “To suppose that safety first consists in having a small gamble in a large number of different [companies] where I have no information to read a good judgment, as compared with a substantial stake in a company where one’s information is adequate, strikes me as travesty of investment policy” (Keynes 1983, 82). In contrast, Markowitz (1952) suggested that instead of focusing on individual assets, investors should have a diversified portfolio of many assets from different sectors. He developed a model for selecting portfolios and made the path-breaking suggestion that portfolio selection should be based on the risk of the portfolio as a whole. In so doing, he linked the notion of risk with expected returns, and assumed that investors have rational behaviours and are concerned by only these two variables. Markowitz’s theory did not have a real impact until William Sharpe developed the idea further in an article published in 1963. To evaluate the risk of the portfolio as a whole, it was necessary to calculate the covariance between all the assets, a tedious enterprise considering the limitations of the technology at the time. Inspired by the new modes of calculation, Sharpe developed a sophisticated but simple formula called the diagonal model, which operationalized Markowitz’s proposition. From
then on, portfolio managers stopped taking into account only the expect returns of investments, and started to consider the relations between returns and risks (Walter 1996, 883).

The collaboration of Franco Modigliani and Merton Miller gave birth to an idea that has been called a “bombshell assertion” (Bernstein 2005). Their collaboration started at the beginning of the 1950s when they joined the faculty of the graduate school of Industrial Administration at the Carnegie Mellon University, which had been established to promote a scientific approach of management (MacKenzie 2008, 39). In a paper they published in 1958, these two academics made a proposition that would eventually have an enormous impact on the study of finance: “the market value of any firm is independent of its capital structure” (Modigliani and Miller 1958, 268). In trying to evaluate the “cost of capital,” which means the expected returns on a firm’s investment, they claimed that in a perfect market the structure of the firm’s capital is not significant. In other words, the ratio of debt to equity is irrelevant to the value of a company. This proposition was path breaking not just because it went against common sense, but also because it shifted the attention from the firm’s decisions to the market. For Weston, the impact of Modigliani and Miller on the field of finance was comparable to the impact of Keynes on macroeconomics: “it transformed the study of finance from an institutional to an economic orientation” (Weston 1989, 29). The theoretical lenses changed from the firm to the market thereafter. Whereas traditional accounting and institutional theories are used to analyze the firm, markets constitute a privileged object for economics. Indeed, Modigliani and Miller’s first article was published in an economic journal—the American Economic Review—and not in a finance journal. Modigliani and Miller’s model led to another important assertion, namely that “all securities with the same patterns will have the same price” (Weston 1989, 30). With this assertion, they opened the doors to widespread arbitrage. They thus paved the way for many sophisticated theoretical developments, such as the efficient market hypothesis, which is
considered the capstone of the development of scientific finance. The efficient market hypothesis stipulates that as an exchange mechanism, the market is efficient because all of the information relative to this exchange is translated by the price. This assertion helped spread the idea that not only actors are rational, as economics assumes, but also that financial markets are too (Fox 2009). The efficient market hypothesis is thus at the core of modern finance theory (Walter 1996, 873).

The Power of Science

The scientization of finance occurred amid a general enthusiasm regarding science and formal modeling. As Whitley describes it:

The high prestige of the natural science after the Second World War, and the success of applied mathematics in dealing with military problems during it, encouraged the widespread belief in the 1940s and the 1950s that “science” could be applied to managerial and business problems and scientific research into these problems should be supported. (Whitley 1986b, 171).

As in the scientization of economics, ideas from physics lay under the rise of scientific finance. Turning finance into a science was triggered by the will to get rid of ad hoc behaviours and make the discipline more rigorous and systematic. To do so, physics constituted the perfect model. Indeed, many parallels can be drawn between physics and modern finance theory. For instance, “Samuelson recognized almost immediately that Bachelier’s densely mathematical description of market behaviour was almost identical to Albert Einstein’s description of Brownian motion—the random movement of microscopic particles suspended in a liquid or gas” (Fox 2009, 65). Moreover, Markowitz’s way of calculating the relation between risk and return was similar to the “wartime calculations on bomb fragmentation” (Fox 2009, 48). The relation between physics and the science of finance was both metaphorical and institutional. The money invested in military purposes served to create research centres in which different theories of finance were developed.
For example, Markowitz signalled in his 1952 article that he was a member of the “Rand Corporation.” Rand, a contraction of the words research and development, was a research centre funded to develop theories for the American armed forces.

Physics also influenced finance indirectly through scientific economics. Indeed, it was with the help of economics models and theories, and more specifically with neo-classical economics, that finance became a science. Unlike finance, economics was a full-fledged science in the 1960s. As chapter 5 described, economics became a positivist science between the two world wars with the development of statistics and the development of econometrics, among other things (Schumpeter 1983, 511). The prestige associated with science made economics a legitimate analytical model to apply to the study of finance. The association of neo-classical economy with financial theory revealed itself as being intellectually prolific. Popperian epistemology underlying neo-classical theory stimulated the development of elegant models. Indeed, Friedman, the principal vanguard of neo-classical economy, shared with Popper the thought that the ultimate test for a model was not whether the assumptions were realistic but whether the model worked. By adopting this epistemology, theorists of finance could develop elegant models despite the complexity of the financial market. For instance, Modigliani and Miller’s assumption—that the structure of a firm’s capital does not matter—is unrealistic because it does not take into account the taxation system. Likes economics, financial theories stem from the assumption of rational actors. In fact, the theoretical proximity between finance and economics is so close that scientific finance is also called finance economics. Most of the people who revolutionized financial thinking were awarded Nobel prizes in economics: Modigliani in 1985, Miller, Sharpe, and Markowitz in 1990, and Fama in 2013.

The scientization of finance occurred in tandem with its mathematization. In business finance, there were a lot of numbers but no mathematics. Up until the 1960s, the Journal of
Finance—the only specialized journal in the field—contained articles that were mainly descriptive (MacKenzie 2008; Whitley 1986a; 1986b). For instance, in the issue Markowitz’s paper was published, no articles other than Markowitz’s had mathematics in them (Bernstein 2005). But with the rise of scientific finance, mathematics became more and more important. A good indicator of this shift was the creation of two new academic finance journals: the Journal of Financial and Quantitative Analysis in 1966 and the Journal of Financial Economics in 1974 (Whitley 1986b, 173).

Scientific finance was also an institutional process. At the beginning of the 1960s, there was no such thing as the field of finance. An anecdote about Markowitz’s PhD defence nicely illustrates the disciplinary context. Friedman, who was on Markowitz’s jury, apparently declared: “Harry, I don’t see anything wrong with the math here, but I have a problem. This isn’t a dissertation in economics, and we can’t give you a PhD in economics for a dissertation that’s not economics. It’s not math, it’s not economics, it’s not even business administration” (Bernstein 2005, 60). A decade later, Friedman would have known how to categorize Markowitz’s dissertation because finance had become a respected academic field. The founders of the discipline soon had their own PhD students who sped up the institutionalization of the new science. The field of finance’s body of knowledge quickly became highly homogenous (MacKenzie 2008; Whitley 1986a; 1986b). In contrast with other social sciences, such as the sociology of political science in which there is no consensus regarding epistemology and ontology, finance came to adopt a coherent epistemological and ontological framework. Newcomers in the field contributed to marginalizing theories of investments, which drew on psychology or sociology.
The Creation of the Financial Market

The scientization of finance contributed to representing the financial market as a coherent system with its own set of laws. With the rise of scientific finance, it became possible to think about finance in a dematerialized way. Gradually, finance was conceptually detached from other spheres of activities such as investment, and represented as an autonomous entity instead. The transition from business finance to scientific finance redirected the attention of investigation from the operations of the firms to asset-valuation models and efficient markets. Sophisticated theoretical models inspired by economics allowed theorists to quantitatively translate qualitative phenomenon by turning a complex reality into various indexes. For example, Markowitz’s portfolio selection theory based investment decisions on two variables: risk and return. Before Markowitz’s theory became widespread, investors selected individual assets and had to take into account various variables, such as the nature of the product, the management of the firms, etc. In contrast, when Markowitz’s theory came to be adopted by practitioners, the focus moved from individual assets to portfolios, and the benchmarks of investors’ decisions moved from various variables to the single notion of risk.

“The shift of attention from corporation to market was in part a matter of finding a focus that was tractable mathematically” (MacKenzie 2008, 74). The mathematization of financial activity was essential to develop a coherent image of the financial market because it placed different variables at the same level while linking those variables together. “Personal judgement was to be replaced by the objectivity of economic-financial calculations, which allowed management to rank investment opportunities, compare alternatives and consider the net economic worth of particular options to the company” (Miller and Rose 2008, 41). In sum, the scientization of finance helped to create the very idea of financial markets. By quantifying a
complex reality and tying together simple variables such as risk and return, it became possible to have a coherent image of financial transactions. The intellectual revolution that occurred in the field of finance in the 1960s parallels the intellectual revolution in the field of economics during the interwar period. The vanguards of scientific finance “attempt to create a mathematical representation of the entire [financial] process as a self-contained and dynamic mechanism” (Mitchell 1998, 85).

2. A New Structure for Intervention: The Representational and Material Underpinning of the Standard-Based Practice of Governance

The incorporation of scientific finance into central banks’ governing practice involved changes in the representational and material conditions for a new standard-based practice of governance. Central banks shifted their fundamental governing purpose from active intervention on financial and monetary flows to the supervision of financial markets. For heuristic purposes, I address representational and material change separately even tough I consider the representational and material dimension as beeing two sides of the same coin. New representations about the financial environment changed the structure of possibility for intervention. The standard-based practices of financial governance developed through the scientific conceptualization of financial markets. Such conceptualizations made it possible to understand financial stability as a risk-based enterprise. In other words, the destabilizing effect of finance came to be perceived as being situated inside the financial market. This stands in stark contrast with the Bretton Woods period wherein the destabilizing effect of financial flows was contextualized within economic reality. The Bretton Woods architects distinguished between “good” and “bad” financial flows, and the role of government was to prevent the bad flows from occurring. At the end of the 1980s, central banks gradually developed prudential regulation to ensure “the efficiency of the financial market”
rather than actively intervening on the market’s architecture to ensure national autonomy on macroeconomic policies. Stability came to be associated with risk management. Alongside representational change, material organizational changes took place both inside the institution of central banks and the international institutional apparatus. Prudential regulations thrived with the technicalization of the institutional organization of governance.

**Representational Change**

Central banks’ practice of governance transformed as the object of governance came to be represented differently. After the Second World War, central bankers and regulators conceptualized financial markets within the broader economic reality. By the 1980s, they started to represent financial markets as a single self-contained entity. The transformation of financial markets paralleled changes in the conceptualization of stability. Whereas financial stability was associated with economic prosperity during the Bretton Woods period, it came to be associated with the efficiency of markets in the 1980s. Within the new conception, a stable financial context thus presupposes the financial market’s self-equilibrium. During the Bretton Woods period, a stable financial context could ensure economic prosperity. The architects of the Bretton Woods system considered the destructive effect of financial flows on the rest of the economy. They distinguished good financial flows from bad and favoured interventions to restrain or prevent the proliferation of bad flows. In contrast, the post-1980s period characterized a stable financial context as self-equilibrating. Instead of performing active intervention to restrain the proliferation

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3 See chapter 5
of destabilizing financial flows, central banks have been supervising the market. To do so, they put a regulation in place that helps to “discipline” the market, namely prudential regulation.

To track the representational transformation of financial markets, I analyze the Bank for International Settlements’ (BIS) annual reports issued from the 1970s to the 1990s. More specifically, I look at how knowledge about finance and central banks’ intervention was organized. First, I trace the change in the various titles of sections and subsections of the annual reports because they are a good indicator of the transformation in the focus of the BIS’s research department over the years. Second, I look at the how the financial object of governance, the problem of stability, and the solutions adopted are conceptualized. The discourse included in the annual reports is not only the mirror that reflects what is happening on the ground, but it translates a specific representation of that ground, which defines the possibility for governance thereafter. My analysis therefore starts from the theoretical assumption that knowledge about the financial object (know what) is interdependent with the perception of the problem (know why) and the governance that is practised (know how). My analysis of annual reports from the 1970s to 2000 reveals the gradual abstraction of financial reality and the stability problem, as well as the shift from intervention to supervision. I detail central banks’ representational change of the financial environment by documenting the restructuring of knowledge: the “know what,” the “know why,” and the “know how.”

**Know What**

It is possible to track the incorporation of scientific finance into central banks’ practice through the term “financial market.” A financial market refers to a self-contained financial environment. In 1981 the BIS devoted a section of its annual report to “financial markets” for the first time. During the 1970s, the analysis in the annual reports revolved mostly around the real
economy and the monetary system, and the financial environment was understood in such a context. The BIS analysts refer to credit markets rather than financial markets. Whereas the term “credit market” is closer to the immediate human experience with banking, “financial market” refers to a much more abstract reality. The “international credit and capital market” section, which ran from 1976 to 1985, addressed banking development and lending practices. The reports’ sections on financial markets, which ran alongside the one on credit markets from 1981 to 1985, aimed to underpin new developments in finance. Each year between 1983 and 1986, the section on financial markets bore a different title, each of which characterized a moving reality: “financial markets and financial innovations” in 1983, “sectorial flows and financial markets” in 1984, “the changing structure of financial markets” in 1985, and “financial market trends” in 1986 (Bank for International Settlements 1977; 1984; 1985; 1986).

Over the years, the level of abstraction of the words to which the term financial market was associated increased. When “financial market” first appeared in an annual report, the concept was associated with the experience of banking activities and understood in relation to the real economy. The financial market was outlined through observations of various sectors of investment, such as the business and personal sectors, rather than through the structure of financial assets as it became the case a few years later. With time, financial markets’ interactions with the other sectors of the economy became less of a concern. For instance, “financial markets” and “monetary policy,” which were part of the same section in the 1981 and 1982 annual reports, got separated in 1983. Increasingly, the financial market was being represented as an autonomous entity. Framed as such, the “financial market” became a conceptual reference point through which it became possible to understand new trends in finance in a consistent way.
It was first necessary to represent the “financial market” to be able to understand “financial stability.” “Financial stability” became an object of discussion for the first time in the 1985 annual report, which is four years after the “financial market” received serious attention. The 1985 annual report includes a section called “the changing structure of financial markets,” in which the notion of financial stability is directly related to risk.

The changes in financial conditions of the recent past and the accompanying intensification of competition have great bearing on another policy concern: financial stability. Stiff competition may spur risk-taking and reduce margins, thus increasing the likelihood of problems in individual institutions. (Bank for International Settlements 1977, 59–60; emphasis added)

The concept of risk became important for incorporating scientific finance into the conceptualization of financial stability. “Risk means the anticipation of the catastrophe” (Beck 1992; 2009), and thus depends on standardized models of prediction that can be established through scientific knowledge. Originally associated with banking activities, the concept of risk diversified as scientific finance became more prevalent. Over the years, while the annual reports referred to a broader spectrum of risks, the idea of risk has also become more abstract. Whereas in 1977 the annual report addresses “sovereign risk” and “commercial risk,” the 1992 document focuses on “market risk” and “systematic risk” (Bank for International Settlements 1977, 102; 1992, 7, 190, 212, 214). The concept of risk in use in 1977 was more intuitive than the ones used in 1992. “Sovereign risks” and “commercial risk” are anchored in a concrete reality easy to imagine; they respectively refer to the possibility of default of payment by states and commercial bankruptcy. In contrast, to understand what systemic risk and market risk entail, it is necessary to have background knowledge on how the system or the market works.
Know How

The concept of “financial stability” was geared to central banks’ governance, especially to variables that are situated inside the financial market. Moreover, the concept of risks helped to define a clear target for governance. Amid such representational change, central banks developed “prudential regulation,” which consists in defining standards of good conduct to reduce the likelihood of risks. In associating stability with risks, regulators did not aim to limit the innovations of the market, but rather aimed to offset the negative consequences of such innovations. Had central bankers decided to limit financial innovations, they would have practised active interventions, which would have influenced the structure of markets. Instead, supervisors opted for a hands-off approach to governance. As Porter argues, “the concept of risk involves a relationship between the use of knowledge to bring about control, on the one hand, and the persistence of the unexpected and contingent, on the other” (Porter 2005a, 174). In other words, prudential regulation combines control and non-intervention at the same time.

The annual reports show that the BIS considered prudential regulation as soon as it started to address the problems of the financial environment in terms of financial stability. The themes of prudential regulation and financial stability were simultaneously discussed in the 1985 annual report. “Prudential regulatory system” was singled out as the main solution to prevent “the problems that could pose a threat to financial stability” (Bank for International Settlements 1977, 60). In the 1988 annual report, the BIS confirmed that risks should be the main concern of prudential supervision: “potential risks in extending the powers of financial firms and markets have long been a topic of discussion and, increasingly, the motivation for strengthening supervisory controls” (Bank for International Settlements 1988, 103). But there was also an inescapable tension underlying the way central banks had been practiseing prudential regulation.
Whereas the term *prudential regulation* presupposed that regulators were ahead of markets to prevent catastrophe, prudential regulation was in fact located behind the market in the sense that it had to adapt to financial innovations. The 1992 annual report acknowledged that “the continued adaptation of the prudential regulatory and supervisory framework to the changing environment” constituted a long-term challenge (Banque de Suisse 1992, 191).

**Material Change**

Not only did the rise of scientific finance translate into new ways of framing the financial environment and problems of stability, but it also meant concrete organizational and institutional changes. Central banks adopted a standard-based practice of governance while establishing an institutional apparatus that provided them with the material tools to do so. At the international level, I trace the material change through prudential regulation that developed amid institutional innovations and international agreements. To trace change at the domestic level, I take the case of the Bank of England, which illustrates the institutionalization of a standard-based practice of governance for three reasons. First, because of the important economic role that the city plays in international finance, the Bank of England has always constituted a vanguard institution for the transformation of international regulative practice. Second, with the dismantling of the USSR, the Bank of England became an important exporter of expertise related to the institutionalization of new central banks. In 1990, the Bank of England developed a Centre for Central Banking Studies, whose main function was to provide “technical assistance and training to overseas central banks.” In 1996, the number of participants increased to over 1,000 in addition to organizing short programs in various central banks of developing or transition economies (Bank of England 1996, 15). Finally, the organizational change at the Bank of England helps us to
assess the depth of the change at play because the bank is one of the most traditional central banks. Even three decades after the Second World War, the bank was described by its new chief economist, Charles Dow, as a “conservative and secretive institution” (Dow 2013, 4).

The Domestic Level

At the Bank of England, the internal organization mirrored the changing representation of the financial environment. Concerns about financial stability crystallized into concrete institutional changes. In 1994, a significant internal restructuring took place. The bank was divided into two wings: monetary stability and financial stability (Bank of England 1995). The previous reorganization was in 1980 when the bank had been divided into two areas: a small area on “policy and market” and a larger one on “services” (Dow 2013, 20). The 1980s reorganization thus was informed by a representation of the economy that was closer to the material reality of banking than the 1994 reorganization. Whereas the 1980s reform reorganized the bank’s structures around its activities, the 1994 reform changed the international organization of abstract functions: monetary and financial stability. The institutional split between monetary and financial stability was reinforced with the 1998 Bank of England Act. The act, which was well known for providing statutory independence to the institution, also reshaped the bank’s management structure that had been in place since the 1946 act. After the 1998 Bank of England Act, the court of directors included two deputy-governors instead of one: a deputy-governor in charge of financial stability and one in charge of monetary stability. Such a reform responds to the institutional rationalization of the rise in importance of “financial stability” and the necessity to generate the right expertise for the bank regarding financial market and financial stability.

The aim was threefold: to achieve a management structure which related much more directly to the Bank’s core purposes; to bring the staff responsible for the Bank’s operational and analytical work more closely together; and to ensure that the Bank has
the right number of staff with the appropriate skills in the right places. (Bank of England 1995, 8)

The Bank of England followed the prudential regulation bandwagon with the Banking Act of 1987. In establishing the board of banking supervision, the act enhanced the bank’s power to supervise the banking sector. When the bank’s authorities started to develop prudential regulation, they addressed the weaknesses of the banking sector but the notion of financial stability remained undeveloped. In the first report produced by the board of banking supervision, the term “financial stability” did not appear even once. Instead the report referred to the “financial soundness of the institution.” It thus took four years more for the Bank of England to redefine its function around the principle of financial stability.

The Bank’s functions as a central bank are to safeguard the integrity and value of the currency; to maintain the stability of the banking and wider financial system and the integrity of payment systems; and to promote the efficiency and competitiveness of our financial markets. (Bank of England 1992, 8)

As the Bank of England redefined its stabilizing function around “financial stability,” the nature of its approach became more technical. As a part of the 1994 internal restructuring, the bank adopted a risk-based approach to supervision. The “supervision and surveillance” division made up the bulk of the operations conducted by the bank’s financial stability wing. Shortly after the bank acquired its independence over its monetary policy in 1997, the financial regulatory structure became even more specialized. The entire financial regulatory structure was revised. Supervision of banking activities became the responsibility of the new regulative body called the Financial Service Authority (FSA) and the bank maintained its responsibility to oversee the “market as a whole.” With that institutional change, the bank increased its focus on systemic and market risk. The 1998 annual report stressed the importance of the Bank of England addressing these types of risks.
It is, however, particularly important to ensure that the Bank’s capacity to identify and address emerging systemic financial problems—those which may have a significantly disruptive effect on the financial system as a whole rather than just on individual financial institutions—is not damaged in the process of change. (Bank of England 1998, 8)

In 1998, the bank reinforced its technical expertise in financial stability by creating the Financial Stability Committee. Through the committee, the bank aimed to deepen its collaboration with other technical institutions, which also addressed financial stability.

We set up an internal Financial Stability Committee paralleling, in the field of financial stability, the work of the Monetary Policy Committee. It oversees the Bank’s work in the financial field and feeds into the three-way consultative process under the Memorandum of Understanding with the Treasury and the FSA. It feeds in, too, to the Bank’s continuing very close involvement with the Bank for International Settlements, the IMF and the new Financial Stability Forum, with governments and other central banks, and with other regulatory bodies and financial institutions, monitoring and containing threats to the global financial system. (Bank of England 1999, 4)

The International Level

At the international level standard-based governance developed materially through institutions building and international agreements whose technical underpinning increased in time. The Basel Committee on Banking Supervision (BCBS), created in 1974, pioneered international prudential regulation in the banking sector with the 1988 Basel Accord. The BCBS was established at the Bank for International Settlements by the Group of Ten after a series of banking failures, such as the Bankhaus Herstatt and the Franklin National Bank. In retrospect, although the systemic effects of the failures were in fact quite limited, they focused attention on weaknesses in the international foreign exchange market and problems related to the internationalization of the banking sector (Schenk 2014). When first institutionalized, the Basel committee was thought of not as a technical committee, but as a forum where central bankers

4 For a review of the BCBS see, for example, Goodhart 2011; Kapstein 1992; Singer 2007; Walter 2008; and D. Wood 2005.
could meet and exchange information about problems in international banking. As the first chairman of the BIS committee, George Blunden, said in his first speech,

We are not intended to attempt to harmonize supervising techniques, riding roughshod over existing practices and legislation in the separate countries represented here. It is appreciated that we cannot commit our countries to such changes. In words which I understand were used by the President of the BIS at a Governors’ meeting, our aim should be “to learn from each other rather than to make far-fetched attempts to harmonize everything we do.” We have to try to understand how things are done in each of the countries represented here and why they are done as they are and to see whether there are techniques in other countries which could usefully be adopted in, or adapted for, our own systems; we should also consider whether there are techniques which we could recommend to the Governors for general adoption, irrespective of the legislative framework against which they would be applied. (qtd. in C. Goodhart 2011, 46)

The Basel committee’s institutionalization followed the current practice of the time. The BIS had been a forum where central bankers could act independently from governments. The BIS meetings helped to coordinate different central banks’ actions geared toward the maintenance of their currency value, such as the gold pool or the currency swap system. In the same spirit, the idea behind the institutionalization of the Basel committee was to create a place where like-minded people could meet and share information about potential threats to the banking sector’s stability. The first agreement negotiated at the committee was the concordat which, according to Kapstein constituted a “gentlemen’s agreement” (Kapstein 1989, 328). The concordat aimed to clarify intervention in the context of banking’s internationalization. “The concordat thus determines joint responsibility between parent and host countries supervising the liquidity of the bank’s foreign branch activities with the parent country supervising the liquidity of the bank’s organization as a whole” (D. Wood 2005, 54). The agreement negotiated in 1971 remained secret until 1981. Whereas the secretive nature of the agreement can seem puzzling to today’s eye, it
followed current practice. For example, when central bankers instituted the swap currency system, they agreed not to disclose the information to the public.\(^5\)

Whereas the negotiations of the concordat were anchored in post-war practices of central bank governance, the negotiations of the Basel agreement opened the door to the rise of technical governance. In focusing on capital adequacy ratios, the Basel agreement aimed to develop a “risk-weighted approach” to banking supervision. Moreover, the Basel accord clearly endorsed the goal to “strengthen the soundness and stability of the international banking system” (Basel Committee on Banking Supervision 1988). With the concordat, the authority had judged national flexibility to be of paramount importance. In contrast the Basel agreement that came into force in 1988 aimed to create a “level playing field” across various countries. Following Goodhart, the decision to adopt risk-weighted capital adequacy ratios came as a second best option. Regulators, whose ultimate aim was to ensure the solvency of the banks, were aware of the relation between solvency and liquidity, but the concept of liquidity proved to be hard to grasp. In contrast, the capital adequacy ratio, which relates to a bank’s credit exposure, was much easier to conceptualize. The “risk-weighted approach” was new, but capital adequacy was not. “Risk-weighted capital adequacy was thus seen as the ‘magic bullet,’ resolving problems of both solvency and liquidity simultaneously” (Goodhart 2011, 330).

The first Basel accord marks a turning point in technical governance. While the accord was based on relatively simple banking principles, the level of technicality underlying risk assessment increased considerably through the 1990s. In developing a risk-weighted regulation, central bankers opened the door to the constant reassessment of risks. With technical innovations, risk measurement constantly seemed to be in disuse. Experts at Basel had to produce novel ways to assess risks as soon as 1993 (Goodhart 2011). In 1997, a Market Risk Amendment to the Basel

\(^5\) See chapter 5.
accord came into force. In 1998, it was officially announced that the entire regulative framework
would be revised in a new accord (Basel II). The new accord aimed to provide “a more
comprehensive approach to addressing risks” (Basel Committee on Banking Supervision 2001, 4).
Basel II was concluded after five years of negotiation and was far more encompassing than Basel
I. The agreement rested on three pillars: “1) specifying minimum capital requirement 2)
providing guidelines on supervision for national regulators, and 3) creating new information
disclosure standards for banks in order to enhance market discipline” (Lall 2011, 612).

There are also other stark contrasts between the Basel I and the Basel II agreement. The
document of the Basel I agreement is thirty pages long and does not include a single
mathematical formula. Most of the attention is geared toward banks’ balance sheets. In contrast,
the Basel II agreement is detailed in 347 pages. It includes a sophisticated discussion of risk
broken down into three types: credit risk, operational risk, and market risk. When it came to
credit risk, the industry could choose between two models of credit-risk assessments: the standard
approach and the Internal Rating Based approach. Various mathematical formulas are detailed,
such as the supervisory formula under the “Internal Rating Based approach,” and the “the capital
charge under the standardized approach” (Basel Committee on Banking Supervision 2006,
139, 147). “The methodology in use in the 1980s had no scientific underpinning whatsoever. It
simply reflected a lowest-common-denominator bargain among the three regulatory agencies to
establish a single standard” (Kapstein 1992, 278). By the late 1990s, scientific finance appeared
in the language used in the Basel accord. A higher degree of expertise is needed to understand the
Basel II agreement than the Basel I accord.

International governance became increasingly technical amid the transnational
harmonization of regulative frameworks and the rise of specialized knowledge. The growing
institutionalization of standard-issuing bodies was the immediate material expression of these
dynamics. Standard-issuing bodies correspond to transgovernmental technical committees. Thanks to their standing committees, standard-issuing bodies have the capacity to generate technical expertise related to small aspects of the financial market. Prudential regulation developed amid “complex, interrelated, and decentralized networks engaged in highly technical collaboration” (Porter 2005a, 31). At the turn of the 1980s, standard-issuing bodies started to thrive. In 1984, the Basel equivalent for security markets was established—the International Organization of Securities Commissions (IOSCO). In 1994, the insurance market developed its own organization for standardization, the International Association of Insurance Supervisors (IAIS), a private international organization. Central bankers have been very active in these types of institution, and have positioned themselves at the centre of the technical collaboration between different bodies. Just as at the Bank of International Settlements (BIS), there are three specialized committees: the Basel Committee on Banking Supervision (BCBS), the Committee on Payment and Settlement Systems (BCBS) in 1980, and the Euro-currency Standing Committee that was renamed the Committee on the Global Financial System in 2010. Central bankers have also been members of the Financial Stability Forum (renamed the Financial Stability Board in 2009) in addition to participating in spring and fall meeting sessions of the IMF and the World Bank.

3. Authoritative Change: The Symbolic Transformation of Legitimate Knowledge

The incorporation of scientific knowledge into governance practices changed the conception of legitimate knowledge, which also transformed hierarchical organization by redefining the criteria for competence and credibility. The move toward a standard-based governance occurred amid the symbolic inversion of legitimate knowledge. The central bankers’ community of practice internalized the idea that traditional knowledge of banking was less valid than scientific finance. For example, a market regulator who worked during the early days of the
Financial Stability Forum explained that he was skeptical about the market practice of externalizing the risk within sophisticated investment vehicles, but he did not express this skepticism because he did not have sufficient background knowledge.\textsuperscript{6}

The Market Risk Amendment

The 1990s was a turning point for the incorporation of scientific knowledge into central banks’ governance. The 1988 Basel agreement, the first stance of a prudential international agreement, was relatively simple. Its underlying expertise took more from the field of business finance than scientific finance.

Up till the early 1990s the BCBS had made little or no use of specialist, professional empirical studies to support their various exercises, relying instead almost entirely on questionnaires and on the experience and expertise of their own members, and the central banks’ (and other supervisory institutions’) wider experience and expertise. (Goodhart 2011, 193)

This changed in the 1990s with the Market Risk Amendment to the Basel accord. Central bank governors then realized the discrepancy between their evaluation method and the ones used in the market.

Having already worked on details of the Market Risk Amendment for several years, it came as a shock to BCBS members to discover, when they issued their consultative paper in 1993, that the commercial banks rejected their approach as technically inferior to that which the main international banks were already using, based primarily on Value at Risk (VaR) measurement. (Goodhart 2011, 564)

The VaR model of risk measurement was a direct product of financial science; it provided marketo-market pricing of a specific portfolio of financial assets. What is particularly interesting to note is how central bankers immediately internalized the inferiority of their models and accepted that the VaR model was better. As Goodhart reports, “officials at the BCBS immediately recognized both the validity of the banks’ complaints about the consultative document, the

\textsuperscript{6} Interview France March 2013.
superiority of the banks’ own techniques and the needs for regulators to learn and master the new modelling techniques” (Goodhart 2011, 248). Indeed, the secretariat’s paper states that “at the meeting in London of a number of Committee members to consider work on derivatives it was concluded that the Committee needs to undertake a ‘crash course’ of education on banks’ in-house models” (Goodhart 2011, 248). When the Market Risk Amendment was finally concluded in 1995, the VaR was adopted as the way to calculate risk. In sum, the Market Risk Amendment case shows that the expertise coming from the private sector, which was based on “scientific models,” was considered superior. As a result central bankers adjusted their notions of competence to align with the ones of the private market.

Redefining the Criteria of Competence and Credibility of the Community of Practice

While top central bank managers had similar sociological backgrounds in the Bretton Woods as during the gold standard period, the period between 1980 and 2000 witnessed change in the social trajectories of central bankers. Education in economics and finance became a crucial factor and decision-making styles also transformed: the relative importance of “gut-feeling decisions” decreased whereas “systematic thinking” increased. At the Federal Reserve, William M. Martin was the last chairman with no degree in economics. Although Martin held a degree that was atypical for a Fed chairman (English and Latin), he had the traditional habitus of a central banker. He held a practical understanding of the context rather than an academic one. Not only was he the son of a former Federal Reserve official, but he also had been the president of the New York Stock Exchange. With such a social and professional background, he could develop many relations with key decision makers in the private sector. Martin believed in the science of economics and even undertook many actions to modernize the use of economics at the

7 G. William Miller, appointed by Carter in 1978, did not have a degree in economics either but remained chairman for only one year. William M. Martin was the longest lasting chairman, serving from 1951 to 1970.
Federal Reserve. Yet he relied mainly on his “sensitivity to market psychology” to make decisions (Axilrod 2011, 27). Although such sensitivity remained a valorized quality for a chairman, its relative importance decreased in time. Arthur Burns had made his reputation as a trained economist before being appointed as a chairman in 1970. The two subsequent chairmen—Paul Volcker and Alan Greenspan—earned degrees in economics, respectively a master’s degree from Harvard and a PhD from New York University. Their academic backgrounds in economics influenced how they made decisions. Greenspan especially was recognized by the staff at the Federal Reserve to be very attentive to a vast array of economic data (Axilrod 2011; Jones 1991). In the words of David Jones, “Alan Greenspan is the ultimate, high level numbers cruncher” (Jones 1991, 84).

Ben Bernanke, who became the chair of the Federal Reserve in 2006, and Mervyn King, who was appointed as the governor of the Bank of England in 2003, had academic backgrounds in economics. They even shared an office at the Massachusetts Institute of Technology (MIT). Marvyn King first joined the Bank of England as a chief economist, became an executive director the year after, and was then appointed deputy governor for the monetary stability wing of the bank. His peers saw him as mainly an academic even though he had eleven years of experience at the Bank of England before becoming governor (Conaghan 2012). King did not have the elitist familial background that most of his predecessors had. “King’s personal history is one of self-determination, academic industry and hard work” (Conaghan 2012, location 1013). He was trained as an economist at Cambridge, and prior to joining the bank he taught at Cambridge and Birmingham University. He was also a visiting scholar at Harvard and MIT. As for Ben Bernanke, he got his PhD from MIT. Prior to becoming governor, he taught at Stanford

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and Princeton (Overtveldt 2009). Both King and Bernanke anchored their monetary policy in standardized models. When Bernanke arrived at the Fed, one of his top priorities was to rely more on “models and research” (Harris 2008, 159). Moreover, he embraced risk-management approaches to policy. Other central bankers, including Alan Greenspan, also believed in risk management, but the Bernanke Fed took risk management to a new level (Harris 2008, 159).

For the last two decades, central bankers increasingly demonstrated a capacity to understand sophisticated mathematics and their application to economics and finance. Although practical sense remained an important asset, academic training in economics and understanding mathematical language became crucial for central banker competence. Fine tuning policy and risk management gradually became a natural approach for central banks. As Johnson (Forthcoming) points out, economics became a natural language for central bankers from the 1990s onward.

The symbolic transformation of competence and credibility and the legitimation of scientific finance was a self-reinforcing process. The adoption of a risk-based framework to understand financial stability created the need to hire people who could master scientific finance and quantitative economics. As new people with such expertise were included in the central banks’ governing apparatus, central banks would tend to favour actions that drew on scientific expertise. For example, in the context of the 1995 Baring Failure, the Bank of England aimed to improve “the effectiveness of our supervisory function” (Bank of England 1997, 6). To do so, they hired Arthur Andersen, an external consultant, to assure the “neutrality” of the process. The report that came out of the inquiry recommended that “the experience, skills and number of Surveillance and Supervision staff should be enhanced through an expanded training programme and the recruitment of more staff with specialist knowledge and skills including a number of
senior banking advisers” (Bank of England 1997, 41). This would help to establish a “more systematic approach to the assessment of risk” (Bank of England 1997, 41).

4. Regulative Changes after the 2008 Crisis:
The Reinforcement of the Standard-Based Practice

The reforms in the aftermath of the 2008 crisis were a reinforcement of standard-based practice rather than the emergence of a new governing practice. To defend that argument, I address two recurrent themes that justify regulative change: 1) the identification of the whole market as the new sphere of intervention, and 2) “ensuring the resilience of the market” as a new purpose of financial governance.

Tackling the Market as a Whole

Since the 2008 financial crisis, there has been a widespread perception that expertise is needed to approach the whole market. Of course the idea of the “market as a whole” existed before the crisis. For example, with the institutional creation of the FSA in England, the Bank of England kept its jurisdiction on financial stability by being granted the responsibility of supervising “the market as a whole.” However, what such ideas imply technically was not very clear at the time. Regulation was divided between specialized agencies to target small aspects of the market. The pre-crisis guidelines had been set by the Wallis report in 1997.9 The Wallis Report—an Australian production—argued that prudential regulators should be separated from central banks.10 A regulatory framework that placed prudential regulation under the supervision of an independent regulative body was considered as the best so that banks could maintain

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9 The Wallis report was pointed out to me in an interview with a senior market regulator in March 2013.
financial stability as their main responsibility. It was argued that the “twin peaks model” could be more effective than the “mega-regulator model” because separated agencies “will perform best with their own distinct cultures” and the different aspects of financial regulation were “too extensive to be combined in one agency with full efficiencies” (Cooper 2006, 4).

Such perceptions arose as “market fragmentation” came to be singled out as the main cause of the crisis. As a senior official at the Bank of France said, “before we had a regulation in silos, but we now aim to construct bridges.” This shift in intervention from targeted indicators to the market has been translated at the institutional level by the centralization of financial regulation within central banks. In England and Europe, more notably, financial regulation has been centralized within central banks. At the European level, an important reform was undertaken with the creation of the Banking Union, which places the ECB at the centre of European financial stability. In becoming the single banking regulator, the ECB helps to harmonize banking regulation across countries. Moreover, the ECB is set to be the single regulator over various supervisory functions that used to be dispersed between different institutions. Therefore the ECB contributes to both banking supervision and crisis resolution because the Banking Union rests on two pillars: the Single Supervisory Mechanism (SSM) and the Single Resolution Mechanism (SRM).

It is not possible to have a Single European Mechanism (SRM) for the supervision of banks but to leave the resolution of banks to national authorities as tensions between the supervisor (ECB) and national resolution authorities could emerge over how to deal with ailing banks. At the same time, market expectations about Member States’ ability to deal with bank failure nationally could persist, reinforcing negative feedback loops between sovereigns and banks and maintaining fragmentation and competitive distortions across the Single Market. (European Commission 2013, n.p.)

11 See, for instance, the speech by Dr. Andreas Dombret, member of the executive board of the Deutsch Bundesbank, in which the terms “market fragmentation” and “financial market fragmentation” are used interchangeably (Dombret 2013).
12 Interviews at the Banque de France, March 2013.
In the UK, the Bank of England also finds itself in the middle of important reforms regarding financial regulation. As is the case in Europe, the reforms at the Bank of England are considered very significant: “the Bank of England is currently experiencing its more important institutional and functional changes in a generation” (Murphy and Senior 2013, 1). Whereas the Bank of England has a statutory obligation to ensure financial stability, its supervision of the financial sector has been under the authority of the Financial Supervisory Authority (FSA) since 2001 (Murphy and Senior 2013). With the Financial Services Act, voted in 2012, the FSA was dismantled, and the Bank of England was not only granted supervision over prudential regulation, but was also given an official active role in financial crisis management. More specifically, the FSA was broken into two institutions: the Financial Policy Committee, an independent institution in charge of consumer rights and independent financial institutions such as hedge funds, and the Prudential Regulation Authority that is now part of the Bank of England. The Prudential Regulation Authority oversees the micro-prudential standards for all commercial banks, insurers, and major investment firms. Macro-prudential regulation is also now under the Bank of England’s authority. Financial crisis management falls under the explicit duty of the Bank of England’s governor who is responsible “to notify the Chancellor of the Exchequer if there is a material risk to public funds” (Murphy and Senior 2013, 21).

**Ensuring the Resilience of the System**

“Ensuring the resilience of the system” is a recurrent theme underlying institutional reforms. “We try to avoid the detrimental effects of the market,” as someone working at the ECB’s financial stability division put it.\(^{13}\) Ensuring the “robustness of the financial sector” is another expression that regulators regularly use. With this in mind, when intervening on the

\(^{13}\) Interview at the ECB, May 2013.
market as a whole, central banks don’t aim to shape it, but to ensure that it “works better.” To make the market more “robust,” regulators now claim that taking financial markets’ complexity into account is key. In other words, instead of reducing the complexity of the financial market, central bank governance is geared toward “managing that complexity.”

Nout Wellink, President of the Netherland Bank and Chairman of the Basel Committee on Banking Supervision, has argued that “the goal or regulatory changes should not be to decrease complexity per se” or to return to the financial regulations of the past but to make complexity “more manageable,” by “constraining system risk” and improving the “resilience of the financial system” as a whole. (Cooper 2011, 373) qtd. in Landau 2014)

As Cooper demonstrates, in the aftermath of the crisis, some central banks’ officials have started to draw from complex system theory which involves a second order of cybernetics theory. Whereas first-order cybernetics drew its epistemic base from physics, second-order cybernetics got its inspiration from biology, and more specifically molecular biology (Lafontaine 2004). Like first-order cybernetics theory, complex system theory is concerned with self-regulating systems of communication, but aims to overcome its static character. It reincorporates the ideas of chaos into system adaptation, and presupposes that the point of equilibrium changes as the system evolves. “Complex systems have somehow acquired the ability to bring order and chaos into a special kind of balance. This balance point—often called the edge of chaos—is where the components of a system never quite lock into place, and yet never quite dissolve into turbulence, either” (Waldrop 1992, 12).

Cooper points out that Andrew G. Haldane—the executive director of the Financial Stability Department at the Bank of England—has been a prime advocate of using complex system theory to increase the performance of financial regulation. For instance, in a recent paper, Gai, Haldane, and Kapadia refer to Herbert Simon, a Nobel winner in economics, who
contributed to complex system theory with his book *The Architecture of Complexity*. They represent financial markets throughout with a complex theory framework.

In this paper, we explore how the complexity and concentration of financial linkages can give rise to systemic liquidity crises that threaten financial system resilience. In keeping with the multidisciplinary spirit of Simon (1962) our theoretical framework draws upon network techniques developed in epidemiology and statistical physics to identify “tipping points” in complex systems, whereby a small change in the underlying parameters or shocks can make a very large difference to outcomes … The network lens also offers new perspectives on a broad range of recent and proposed policy measures aimed at tackling financial risk. (Gai, Haldane, and Kapadia 2011, 2)

The majority of financial regulators do not directly refer to complex theory the way these authors have. Several officials at the Bank of England have highlighted that Haldane has a more academic approach than the bank’s other executive directors.\(^\text{14}\) In fact, Haldane makes explicit what is implicit: central banks’ governing practice is structured around complex structure theory principles. Therefore, ensuring the “robustness of the market,” guaranteeing the “resilience of the system,” and “managing market complexity” are different facets of the will to help complex financial markets to work more efficiently. The position central banks have taken *vis-à-vis* financial markets is similar to the way second-order cybernetics has conceptualized the role of the outside into the system’s self-organization. The thinkers in second-order cybernetics recognized that absolute self-organization was not possible, but they also rejected the idea that a system could be externally programmed for self-organization because it defeated the purpose of self-organization. They thus adopted the position that the external and inside environment should collaborate with the mechanisms of self-organization (Dupuy 1982 qtd. in Lafontaine 2004). In that sense, central banks’ governance has aimed to create mechanisms for the financial system’s self-regulation. In practice, this has meant the development of standardized crisis resolution regimes and bail-ins.

\(^\text{14}\) Interview Bank of England May 2014.
In the post-2008 context, not only prudential regulation has been revised, but standardized procedures have also been widened into crisis resolution mechanisms. More precisely, the new resolution regimes have developed procedures that unfold in three stages: prevention, early intervention, and resolution (European Commission 2012). Prevention concerns all micro and prudential regulation. Regulators now put a lot of emphasis on liquidity ratios, which is perceived as a way to “buffer” systemic shocks. Big financial institutions, in particular, are required to prepare “living wills” that establish a blueprint about how the bank would be dismantled if necessary. The second stage is early intervention, which aims to prevent the situation from deteriorating. A bank’s recapitalization and forbearance are examples of tools used in that case. Forbearance consists of delaying foreclosure to give the institution some liquidity. Finally, resolution is geared to the development of “bail ins,” which consist in making creditors bear most of the loss. Bail in, in contrast to bail out, aims to make the market take the hit instead of taxpayers when financial institutions are in distress. As Paul Tucker, the former deputy governor of the Bank of England and chair of the FSB’s Resolution Steering Group, argues,

Anyone tempted to argue against pursuing the resolution policy agenda would effectively be wanting to increase the (contingent) burden on the taxpayer. That would be liable to increase the pressure for fiscal austerity. As well as avoiding bailout by taxpayers, we must avoid liquidation—putting a failed bank through a standard bankruptcy procedure. That brings chaos. Resolution regimes are a way for the authorities to avoid the direct hit to the public finances while at the same time containing disorder in the financial system. (Tucker 2012, 2)\(^\text{15}\)

Put that way, bail in is considered the only way to solve the problem of the taxpayers’ burden. But such an argument ignores the underlying cause of taxpayers’ involvement in crisis resolution. Taxpayers are increasingly pressured because the financial sector has become bigger and bigger relative to the real economy. Therefore, an alternative solution to the “too big to fail” problem would be to lower the size of financial sectors. Central banks do not yet show intentions

\(^{15}\) Tucker quit his function in October 2013
to go that way. As Mark Carney said, “it is not for the Bank of England to decide how big the financial sector should be; our job is to make sure that it is safe” (Carney 2013). Recently, the Banque de France’s governor—Christian Noyer—took a strong stand against the European Commission’s proposition to break down banks’ activities. He argues that such a measure would be detrimental to the economy because it would make raising capital more difficult for small enterprises. For him, the European Commission’s proposal stems from a false representation of the markets, which does not acknowledge that markets and banks are now intertwined (Noyer 2014). With this line of argument, Christian Noyer does not challenge the market’s constitution, but accepts it as a “fact,” and thus implicitly denies central banks’ authority to influence how markets are. Pushing the bail-in issue therefore signals that central bank officials take into account the problem of taxpayers’ burden, but more importantly, that they do not want to challenge the importance of the financial sector. Central banks have not come back to active intervention. Rather, their actions are aimed at preserving financial markets as a self-contained reality.

5. Synopsis

The present chapter addresses central banks’ turn toward standard-based governing practice. It details the creation of the representation of “financial market” as a self-contained entity through the scientization of finance. As the new representation became part of the background knowledge of the community of practice, central banks transformed their practice of governance in the 1980s. The representation of financial market opened up new opportunities for governance: it provided the conceptual viewpoint through which it became possible to understand financial stability as a risk-based enterprise. The destabilising effect of finance came to be perceived as being situated inside the financial market.
The analysis of the BIS annual reports demonstrate the gradual transformation in the way to represent the financial environment. Gradually, concrete designation of the financial reality, such as “credit market,” “resilience of the banking sector,” or “commercial risks” are substituted with more abstract terms such as “financial market,” “financial stability” and “market risk.” “Financial market” started to receive serious attention at the beginning of the 1980s, “financial stability” and “risks management” shortly later. Representational changes co-constituted institutional changes. The representational separation between financial stability and monetary stability was institutionalised within the Bank of England with the organisational split between the monetary stability and financial stability divisions. Risk-weighted prudential regulation developed with the rise of standard-issuing bodies, allowing a turn to technical stability supervision.

Moreover, the study of the community of practice shows that the community experienced an important shift regarding the legitimate expertise of their members. The symbolic structure around legitimate knowledge transformed. The community of practice incorporated the idea that traditional knowledge of banking was less valid than scientific finance. As the negotiation of the risk amendment of the Basel accord demonstrates, change in legitimate knowledge was not imposed by the private sector but internalised by the community.

Finally, the chapter argues that the regulative reforms undertaken in the aftermath of the 2008 financial crisis constitutes a reinforcement of the practice rather than a departure from it. On the one hand, the reforms might look like a shift from the previous regulative system. The role of central banks in financial stability increased after the financial crisis. As an official in the financial stability department of the Bank of England commented, before the crisis, the Bank had only verbal tools in financial stability, now it has the power to act. In contrast with the pre-crisis
time, the financial stability department is now very active within the Bank—this is where the action takes place.\footnote{Interview Bank of England May 2014.}

On the other hand, by contextualising the regulative transformations that have been occurring within central banks since the 1980s, it is possible to notice that the post-2008 regulative change corresponds to a reinforcement of the standard-based practice. The idea of a self-coherent financial system is further strengthened with the incorporation of complex system theory. Moreover, in establishing bail in and standard resolution regimes, regulators aim to make the market more self-resilient, which push further the idea of financial stability as a self-equilibrating process. Finally, in Europe, technical supervision is increased even further by placing financial supervision under the authority of the ECB.
The dissertation offers a practice-based analysis of the evolution of central banks’ authority since the nineteenth century. In so doing, it anchors the specific issue of central banking to “the grand theme of change”—one of the initial IPE disciplinary interests (Cohen 2008, 67). Macro-structural changes in financial governance were not solely the result of material power, crisis, and market structure, but also arose through changes in how the financial environment was represented and in the rules of competence and credibility that defined who was entitled to act. A practice-based analysis also reintroduces the notion of stability, which has been overlooked by the literature. Whereas central banks remain legitimate authorities of governance, the nature of their practice changed.

1. A Practice Theory of Financial Governance

Conventional thinking in IPE establishes a causal link between historical macro-structural change and international power structures. Consequently, the transformation from the gold standard regime to the Bretton Woods regime is considered to be driven by hegemonic change from British to American hegemony. As for the rise of globalized finance that began at the dusk of the Bretton Woods system, it is perceived as the result of the private financial sector’s empowerment. In contrast, a practice-based analysis of governance brings the effect of representational and symbolic changes to the forefront of the analysis. On the one hand, the
dissertation shows that consensual knowledge around the representation of the financial market environment constitutes the necessary condition for change in governance to occur. On the other, it demonstrates that structural changes in financial governance occurred through the cultural reconfiguration of the central banks’ community of practice. I also investigated the interrelated aspects of change and stability. Since 1870s, central banks have continually exercised their authority to help ensure the stability of the economic and financial environment whereas the nature of their practices has changed over time. To encompass the simultaneous effect of change and stability, I use the term “governing practice” rather than designating the historical period by its formal arrangements the way standard explanations of global governance do. Instead of referring to successively, the gold standard, the Bretton Woods period, and the era of global finance, I use “monetary-based,” “capital-flow-based,” and “standard-based” governing practice (see table 7.1 for a summary of the two approaches). The term governing practice thus can encompass both the continuing authority of central banks in financial and economic governance, and the changing nature of the target of such governance. Amid the transformations of market representations, central banks have transformed their governing practices.
Table 7.1. Standard Explanation (SE) vs. Practice-Based Explanation (PBE) of Historical Change in International Political Economy

<table>
<thead>
<tr>
<th>SE</th>
<th>Regime</th>
<th>Gold Standard</th>
<th>Bretton Woods Regime</th>
<th>Globalized Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Power (cause)</td>
<td>British hegemony</td>
<td>American hegemony</td>
<td>Private actor power</td>
</tr>
<tr>
<td>PBE</td>
<td>Governing practice (Monetary-based)</td>
<td>(Capital-flow-based)</td>
<td>(Standard-based)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Representation of market (necessary condition)</td>
<td>Banking structure</td>
<td>Economic market</td>
<td>Financial market</td>
</tr>
<tr>
<td></td>
<td>Community of practice (mechanism)</td>
<td>Traditional society of bankers who are part of the domestic elite</td>
<td>Internationalized and Professionalized traditional banking community</td>
<td>Insightful individuals with academic backgrounds</td>
</tr>
</tbody>
</table>

Representations of the Market

By adopting a practice theory of governance, I direct attention to the role of knowledge in governance. The dissertation offers three specific insights regarding the role of knowledge in the making of global governance. First, I look at the influence of economic science on the representations of the market, which allows me to historically contextualize knowledge. In doing so, I have shown that various representations that we now take for granted, such as national economic markets, have been historically constructed. Moreover, I have demonstrated how markets representations have been affected by the evolution of economic science, and more specifically by the constant scientization of the economic environment. Various representations of markets were created amid the increasing separation of the economic domain from its human experience. Three distinct representations of economic markets ensued: 1) the representation of
markets based on banking reality, 2) the representation of the national economic market, and 3) the representation of the financial market. Therefore, in looking at the influence of economic science on market representations, I define the historical boundaries of what is possible and what is not. For instance, in chapter 4, I show that, in the nineteenth century, it was more accurate to use the term “issue policy” than monetary policy. The concept of “monetary policy” involves indicators such as price stability, unemployment level, and economic growth, which did not exist at the time. During the nineteenth century, central banks instead aimed to ensure money convertibility in manipulating interest rates and the gold reserves. The transmission mechanism between interest rates and the supply of money was not clearly defined. Central banks had a hard time influencing the market with their interest rates, since bills of credit could be discounted at a market rate that was lower than the interest rate. In chapter 5 and 6, I highlight the historical origin of market representations that are now taken for granted—respectively the national economic market and the financial market. Chapter 5 explores how the representation of a self-contained national economic market was produced through the scientization of economics in the interwar period. Then chapter 6 addresses the scientization of finance to demonstrate how that process gave rise to the concept of a “financial market” as a self-contained reality.

Second, by addressing the interdependent nature of knowledge, I show how representation of the environment (know what) is interdependent with the perception of a problem (know why) and the way to intervene (know how). A distinct representation of the economic environment constitutes a conceptual referential point through which it became possible to understand how stability should be governmentally pursued. In chapter 5, I show that the creation of a national market representation opened the door to interventions that take into account macro-economic indicators, such as unemployment rates and GDP. Stability came to be associated with economic prosperity, and the financial environment started to be understood in the context of economic
markets. By distinguishing between good and bad financial flows, central banks’ intervention was geared toward controlling destabilizing flows. Key decision makers shared the perception that free capital flows would threaten national autonomy in macro-economic policies.

Chapter 6 tackles the notion of financial stability as a self-referential concept. In contrast to “economic prosperity,” in which the financial environment is understood in relation to the economic environment, “financial stability” refers to a stability constrained within the financial environment. With this vision, central banks gradually developed risk-weighted prudential regulation to ensure market efficiency.

By pointing to the interdependence of knowledge, I challenge the notion of supply and demand in regulative reforms. Demand and supply do not exist independently of each other; they are embedded in larger representations of what is or is not possible. Accordingly, in chapter 6, I look into the regulative reforms undertaken in Europe in the aftermath of the 2008 financial crisis and argue that they did not lead to change but instead reinforced the notion of the financial market as autonomous entity. Indeed, the objective behind the regulative reforms such as developing standard resolution procedures was to ensure the “resilience of the market.”

Finally, I demonstrate that representational and material transformations are intrinsically linked with one another. As chapter 5 shows, the financial environment’s transition from being understood in relation to the banking sectors to being a single tight national economic market occurred parallel to institutional change within central banks. Central banks formalized their internal structures and created research departments. In chapter 6, I show how the Bank of England reorganized its international structure to take financial stability into account. The bank was divided into two wings: monetary stability and financial stability. Moreover, prudential regulation thrived in tandem with the development of standing committees and the rise of standard-issuing bodies.
Cultural Reconfiguration of the Community of Practice

New representations of the financial environment constitute a necessary but not sufficient condition to transform governance. To be incorporated into the practice, new representations have to be part of the background knowledge shared by the community of practice in central banking. While some cultural characteristics of the community have remained stable, others have changed. Over time, the community maintained some of its core characteristics. As one of the interviewees said, central bankers have remained “the aristocracy of techno-structure.” Central bankers have continuously displayed an authority that relies on expertise. They maintained an authoritative position that encompasses both the private and public domains. But the community of practice has also experienced change. New governing practices occurred through the cultural configuration and reconfiguration of the community of practice.

In chapter 4, I show the mutual constitution between the social position and disposition of the community practice and the content of the practice being performed. In so doing, I drew the cultural characteristics of the community in charge of implementing the gold standard in France and in England. In both countries, the community occupied a privileged social position within the state’s elite, which provided them with the legitimacy and capacity to perform actions that affected the national banking sector. The community was highly homogenous and conservative. Newcomers in the community were coopted by the groups already in place, and there was no room for creative thinking. The individuals who were part of the community were not academics or intellectuals, but professional bankers and merchants. Consequently, the practice of the gold standard did not follow any abstract principles, but was rather defined through the material

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1 Interview with French market regulator, March 2013.
context of money and banking. Central bankers performed supervisory actions based on their traditional knowledge of the banking sector.

In chapter 5, I look at the influence of scientific knowledge on the community of practice. I show that the cultural background of the community incorporated the scientific project in an ambivalent way. The community of practice, to some extent, transformed according to the rise of economic science: professional economists came to be integrated within central banks’ bureaucracy, and central bankers increasingly relied on a structure that could produce formal scientific knowledge. However, the community also experienced idiosyncratic transformations. The interwar period witnessed the internationalization of the community of practice. Central bankers also still relied on traditional ways of working. The post-Second World War practice of governance was therefore a creative adaptation of the scientific project. Central banks included the provisions of the Bretton Woods agreement in providing technical assistance for the control of capital flows. They also established measures, such as the gold pool and the swap system, to ensure the stability of fixed exchange rates.

Finally, chapter 6 addresses how the community of practice transformed in the context of the scientization of finance. Although practical sense remained an important asset, academic training in economics and understanding mathematical language became crucial to central banker competence. Central bankers internalized the perception that scientific finance was superior to practical knowledge of finance. Fine tuning policy and risk management gradually became an integrated component of the central banks’ policy toolkit. The symbolic transformation of competence and credibility and the legitimation of scientific finance was a self-reinforcing process. The adoption of a technical standard-based framework to understand financial stability created the need for people who could master scientific finance and quantitative economics. As
new people with such expertise came to be included in the central banks’ governing apparatus, central banks would tend to favour actions that drew on scientific expertise.

2. The Normative Dimension of Financial Governance

In regards of avenues for future research, studies of global governance should include a normative dimension and the practice-based analysis of central banks governance I have developed here provides a step in that direction. The dissertation investigates the social and historical constructions of governing practice, and thus sheds light on the socio-historical context around knowledge. Regulatory practices are not an answer to a specific material context. Rather, they are mutually constituted in a coherent framework of knowledge that specifies the nature of the interactions between governmental intervention and the market. A practice-based analysis opens the door to normative analysis because it rejects reality as given and assumes that things can be otherwise.

I have focused on the nature of the interactions between central bank governance and the market—but the normative analysis reincorporated the role of society. The normative question addresses the question of fairness and distributive justice. It therefore directs our attention to the interactions between market, governance, and society to question whether such a configuration respects the norms of fairness. I have recovered the structure of knowledge of various technical regimes of governance regarding stability. While after the Second World War stability concerns were anchored in economic prosperity, more recent reforms aim to ensure stability by ensuring the system’s resilience. Consequently, the analysis here can serve as a stepping stone to a historical comparison of the notion of fairness implicit in the various governing practices I have discussed.
Through its historical approach, the dissertation sheds light on the constant technicalization of central banks’ governance. As chapter 6 showed, regulators have justified technical expertise as offering a neutral view on governmental actions. But technique is not neutral—it translates an implicit normative view on the relation between politics and society, a view that ignores its own normativity. Therefore, the current regulative reforms contain an implicit but specific normative stance that has not been addressed by the regulators themselves. The various people I interviewed for this thesis did not focus any attention on the social dimension of financial regulation. When I ask what needed to be done, they would refer to various technical aspects of financial stability, such as the definition of liquidity ratio, or standards-resolution mechanisms. As such, a normative analysis is therefore even more crucial today because it aims to address those dimensions that are ignored by the regulators themselves.


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