Calculability as Politics in the Construction of Markets: The Case of Socially Responsible Investment in France

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Jean-Pascal Gond is Professor of Corporate Social Responsibility at Cass Business School, City University London (UK). His research mobilizes organization theory and economic sociology to investigate corporate social responsibility (CSR). His research in economic sociology is concerned with the influence of theory on managerial practice (performativity), the governance of self-regulation, and the interplay of society's commodification and markets' socialization. He has published in academic journals such as *Business and Society, Business Ethics Quarterly, Economy and Society, Journal of Management*, *Journal of Management Studies, Organization*, *Organization Science*, and *Organization Studies* and French journals such as *Finance Contrôle Stratégie*.

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Abstract

This paper examines some of the processes by which power constitutes calculability and, in so doing, shapes the construction of markets. We combine insights from performativity studies about calculability with Lukes' 'radical view of power' to investigate how multiple facets of power are mobilized to influence the creation and activities of calculative agencies in the process of market construction. An in-depth longitudinal study of the French socially responsible investment market shows how organizations acting as calculative agencies become *sites of power* through calculability. We identify how power is exercised *over*, *through* and *against* these calculative agencies by a variety of actors in order to build their position in the socially responsible investment market. Our results complement the broader question of the 'government of economic life' by showing how micro-level power games interact with the macro-politics of market building through calculative agencies. In so doing, our paper sheds light on neglected aspects of the changing geopolitics of calculative power in market construction and suggests approaching 'calculability as politics' when studying the construction of markets.

Key words: Calculability – Economic Sociology – Politics – Power – Socially Responsible Investment

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Although calculative practices have been recognized as 'key ingredients' in the process of market construction (Callon, 1998; Callon & Muniesa, 2005; Fourcade, 2007), the political implications of considering calculative agencies in the making of markets have not yet been fully investigated (Cochoy, Giraudeau & McFall, 2010). Studies informed by the Foucauldian approach to power as ‘subjectification’ (Foucault, 1978, 1979) have documented how calculative agencies contribute to ‘govern economic life’ (Miller, 1992; Miller & Rose, 1990) within markets by creating ‘inequalities in calculative power’ (Van Hoyweghen, 2014) or by promoting a disciplinary ‘ideology of numbers’ (Chelli & Gendron, 2013).

Although these works connect micro processes for the constitution of power based on calculative devices to broader ideological trends such as the diffusion of a neo-liberal ideology (Miller & Power, 2013; Miller & Rose, 1990), they tend to overlook that calculative agencies operating within markets are also ‘organizations’ (Ahrne, Aspers & Brunsson, 2015). As such, they can mobilize facets of power other than subjectification to promote their own interests, compete with each other to produce and/or to benefit from calculative asymmetries, and be enabled or constrained by other actors to achieve specific ends. In addition, performativity studies of markets (Fourcade, 2007) have rarely engaged with studies of ‘markets-as-politics’ that focus on the construction of regulations and insist on the role of macro actors such as governments or labour unions in their accounts of market construction (Fligstein, 1996, 2001). As a result, the macro politics of market making has rarely been studied in relation to the micro dynamics of power constitution through calculative practices.

This paper starts addressing these limitations by examining how power and calculability interface in the process of market construction. Central to our study of the politics of calculative agencies are Lukes’ (2005) critical discussion of Foucault’s (1978) analysis of power – according to which multiple alternative facets of power such as coercion, manipulation and domination potentially relate to calculative practices – and Fleming and Spicer’s (2014) suggestion that power does not only necessarily occur ‘within’ organizations but also *over*, *through* or *against* organizations.

To analyse how calculative agencies engaged with multiple forms of power while being subjected to broader political forces, we conducted a longitudinal analysis of the French market for Socially Responsible Investment (SRI) between 1997 and 2008. Our findings show how major macro actors such as state-owned banks or labour unions promoted their interests by exercising their power and shaping the process of market development through their influence *against*, *over* or *through* the multiple calculative agencies that were in charge of the evaluation of the 'socially responsible quality' of corporate stocks or SRI funds. Our results also show that calculative agencies became organizational 'sites of power' and relied on multiple facets of power to consolidate their market position through the creation and maintenance of calculative asymmetries that made other actors dependent on them.

In examining how multiple forms of power interact with calculability in the construction of a market, this paper seeks to contribute to the analysis of the 'changing geopolitics of calculative power' (Callon & Muniesa, 2005: 1238) in at least two ways. First, we contribute to the analysis of power by highlighting how multiple facets of power are engaged in relation to calculability. Our analysis complements prior research focused on how 'power as subjectification' is enacted through calculative practices (Miller & Power, 2013) by adopting the three-dimensional view on power proposed by Lukes (2005) and by documenting how calculative agencies also mobilize *coercion* by shaping access to resources or uncertainty; *manipulate* other actors by shifting these actors' position within the calculative supply chain to design and redesign calculative asymmetries to their own benefit; and are potentially mobilized by attempts to *dominate* the market by other powerful actors.

Second, in line with recent calls (Krippner, 2005, 2011; Vollmer, Mennicken & Preda, 2009; Vosselman, 2014), our analysis contributes to further cross fertilize studies ranging from the micro politics of calculative practices to the macro politics of market building by specifying how forms of power are *constituted by* but also deployed *through*, *over* and *against* calculative agencies. In so doing, our study uncovers new aspects of the power-calculability nexus and moves towards an approach of ‘calculability as politics’ for studying market construction. Calculative activities are not only a means to exercise power, they also constitute autonomous ‘sites of power’ producing unintended political effects that may influence market construction.

Politics and Calculability in the Construction of Markets

Central to early economic sociology accounts of market construction is the notion that the development of markets, as with any other economic activity, can hardly be analysed without considering the social, institutional and political context within which it takes place (Polanyi, 1957). The political sociology of markets developed by Fligstein (1990, 1996, 2001), in particular, insists on the importance of defining governance rules that embed a ‘conception of corporate control’ (Fligstein, 1990) to make the construction of markets possible. This view also highlights the central role of the government and other powerful macro-social groups of actors such as labour unions or corporate lobbies in the process of market construction and transformation. According to this view of ‘markets-as-politics’, ‘social relations within and across firms and their more formal relations to the state are pivotal to understanding how stable markets emerge’ (Fligstein, 1996: 656). Market consolidation, transformation or collapse can be interpreted in relation to deliberate moves by powerful macro-social actors (Fligstein, 1990, 2001). For instance, Morgan (2008) highlights the indirect yet central role of national governments in the organization of a multilateral association that made it possible to create a market for over-the-counter derivatives, and Brès and Gond (2014) show how consultants actively mobilize regulations in the social and environmental domains to build new business opportunities.

In recent years, another perspective on the construction of markets inspired by the field of Science, Technology and Society (STS) studies has emerged around the umbrella of ‘performativity studies’ (Gond, Cabantous, Learmonth & Harding, 2015), shifting the focus of analysis from how institutions, networks or politics construct markets to the question of ‘how markets construct societies’ (Fourcade, 2007: 1024), notably by pointing to the role of calculative devices in market making (Callon, 1998, 2007, 2013). According to this view, markets are conceived as ‘collective calculative devices’ (Callon & Muniesa, 2005) that enable actors to make decisions by evaluating the properties of the goods to be exchanged (Çalişkan & Callon, 2010; Callon, 1998).

Central to this stream of studies is the analysis of calculative agencies, devices and tools that contribute to revealing, materializing and making calculable the properties of goods or service so that actors can exchange them on markets (Callon & Muniesa, 2005: 1231; Power, 2004). Beunza and Garud (2007), for instance, highlight the challenges of securities analysts, who had to search for metrics to value new business models before the ‘.com bubble’; MacKenzie and Millo (2003) have documented the major role played by calculative devices embedded in the ‘Black-Sholes formula’ in the constitution of a market for financial derivatives in Chicago; and Callon (2009) and MacKenzie (2009) show how calculability issues underlie the building of a market for ‘carbon trading’.

Performativity studies of markets have been initially criticized for their lack of political anchors and the importance they attribute to the role played by economics in actual market making (see Holm & Nielseon, 2007; Miller, 2002; for a recent synthesis: Vosselman, 2014). However, several studies have highlighted the micro-political dynamics inherent to calculative devices, clarifying the connection between the performativity studies of markets and the ‘government of economic life’ thesis (Miller, 1992; Miller & Rose, 1990), according to which calculative activities should be regarded as related to broader power dynamics (Miller & Power, 2013; Vollmer, Mennicken & Preda, 2009). For instance, Van Hoyweghen’s (2014) analysis of the life insurance market shows that mundane calculative devices used by insurers and medical agencies in their daily activities contribute to the production of ‘political effects’, notably by producing and reproducing inequalities. In the domain of SRI, Déjean, Gond and Leca (2004) have mobilized Callon (1998) together with a Foucauldian view on power to highlight how calculative devices within the SRI market produce ‘systemic power’, while Chelli and Gendron (2013) show how sustainability ratings promote an ‘ideology of numbers’ in the SRI market that sustains various forms of ‘disciplinary power’ (Foucault, 1978, 1979).

Even though these developments have confirmed the relevancy of combining a political / power approach to market making that includes insights from the performative / calculative perspective on markets, we argue that they remain limited by their univocal conceptualization of power as ‘subjectification’ (Fleming & Spicer, 2007) – derived from Foucault’s concepts of ‘governmentality’ (Foucault, 1979) and ‘discipline’ (Foucault, 1978) – and their corollary neglect of other facets of power that may be involved in the process of market making through calculability. In so doing, these works do not yet fully explore how macro political dynamics interface with the micro political effects documented by studies of markets as ‘collective calculative devices’. We now turn to an alternative approach to power to reconsider how calculability and power interact in the process of market construction.

Beyond Subjectification: Reconsidering Power and Its Links to Calculability

Central to our argument is Lukes’ (2005) critical reconsideration of the concept of power as ‘subjectification’, which is inherent to the Foucauldian notions of ‘governmentality’ and ‘discipline’ (see Foucault, 1978, 1979) that have to date informed most analyses of how calculability and power interact through market making. According to Fleming and Spicer, ‘power as subjectification’ can be described as follows:

> Here, the focus is not on decision-making or non-decision making, or the ideological suppression of conflict, but the constitution of the very person who makes decisions. According to [Michel] Foucault, power is achieved through defining the conditions of possibility underlying how we experience ourselves as people. Power, therefore, produces the kind of people we feel we naturally are. (Fleming & Spicer, 2007, p. 23)

For Lukes (2005), Foucault's approach to power as 'subjectification' is 'ultra-radical', and the accounts Foucault provided are too ideal-typical to grasp through actual analyses of empirical processes of how power plays out and, in particular, of whether and how power has either *succeeded* or *failed* (p. 98). Lukes (2005: 99-107) reserves his fiercest critiques to Foucault-inspired works that have analysed how 'subjects are constituted by power' because these works are 'de-facing' power. According to Lukes (2005), in adopting such a broad, fluid and subjectivist understanding of power, Foucauldian scholars buy into a subversive reconsideration of freedom that makes power and its effects so pervasive that 'it no longer makes sense to speak … of the very possibility of people being more or less free from others' power to live as their own nature and judgement dictate' (p. 107).

In contrast with Foucault's subjectivist and 'ultra-radical view on power', Lukes (2005) argues that power is 'real and effective', even though it may operate through 'hidden' and 'indirect' means (p. 64). Lukes' (2005) alternative approach to power is known as the 'radical' or 'three-dimensional' view and derives from the basic notion 'that *A* exercises power over *B* when *A* affects *B* in a manner contrary to *B*'s interests' (p. 37). Yet, Lukes (2005) expands considerably this liminal definition to integrate the consideration of observable uses of power as expressed through *coercion* by controlling uncertainty or access to resources (Dahl, 1957; Pfeffer, 1981). Further, he considers the more covert or subtle processes of *manipulation*, consisting for instance of 'setting agendas' or 'mobilizing actors' biases' (Bachrach & Baratz, 1970) to maintain the status quo or to impose the views desired by powerful actors by presenting them as unavoidable or desirable, a process referred to as *domination* in the literature on power (Clegg, Courpasson & Phillips, 2006; Courpasson, 2000; Fleming & Spicer, 2007, 2014).

We contend that Lukes' (2005) approach to power as encompassing facets related to *coercion*, *manipulation* and *domination* usefully complements studies focused on 'power as *subjectification*' to empirically document the calculative-power nexus in the process of market construction for two reasons. First, calculative agencies not only 'constitute subjects and subjectivities' (Miller, 1992; Miller & Rose, 1991) but can also engage in coercion or manipulation on their own and can be actively mobilized through other actors' power games. By considering calculative agencies as potential 'sites of power' but also as 'autonomous market organizations' (Ahrne et al., 2015) with their own agendas and interests, we can deepen the prior subjectification views on calculability by analysing how power plays *through*, *over* and also *against* calculative agencies in a process of market construction. Second, in calling to give a 'face' to power by identifying 'who' and/or 'what' actually exercises power over 'whom' and/or 'what' and determining whether uses of power succeeded or failed, Lukes' (2005) approach to power can elucidate how the micro politics of calculability is related to the macro-political processes of market construction.

To analytically document how the multiple facets of power play out in a process of market construction, we consider the multiple sites from which power can be exercised in relation to calculative agencies, in line with Fleming and Spicer (2014). Power occurs *through* organizations when 'an organization as a whole becomes a vehicle or agent to further certain political interests and goals' (Fleming & Spicer, 2014: 246), and calculative agencies can certainly serve higher level political interests, potentially despite their own will and even without their own knowledge. Power can also play *over* organizations as 'the way in which elites might compete to influence the objectives, strategies, and makeup of the organization's goals' (Fleming & Spicer, 2014: 246), for instance, by redefining the calculative practices or the governance structure of a calculative agency. Finally, power can play *against* agency when 'extra-organizational spaces' are used 'to engage in political struggles in order to target organizational activity' (Fleming & Spicer, 2014: 246-247): calculative practices and their outcomes such as numbers, ratings and rankings can indeed be contested from outside, as the legitimacy of a calculative agency can be drastically reconsidered.

Our approach to power allows the relationships between calculability and power to be explored while recognizing that calculative agencies can produce 'forms of power' and 'political effects' through their activities. In addition, it also makes it possible to consider the *emergent* and *unintended* effects of calculative activities such as disruption and changes in market order, which have often been neglected by both political and calculative analyses of markets (Overdevest, 2011), and to consider the capture or remobilization of these effects by actors to alter the dynamics of market construction.

In sum, to complement prior studies of how power and calculability interface and to elucidate how the 'changing geopolitics of calculative power' (Callon & Muniesa, 2005) is related to the construction of 'markets as politics' (Fligstein, 1991, 2001), we propose empirically exploring how multiple facets of power – beyond 'subjectification' (Foucault, 1978, 1979) – are engaged *by, through, over* and *against* calculative agencies in the construction of a market. To do so, we focus on the case of SRI in France.

Context, Method and Data

Research Context: Socially Responsible Investment in France

SRI can be broadly defined as a set of investment practices (Kurtz, 2008) that aim at considering extra-financial criteria 'in decisions over whether to acquire, hold or dispose of a particular investment' (Cowton 1999: 60). These extra-financial criteria can relate to environmental, social, ethical or governance considerations (Eurosif, 2014). Empirically, SRI can be regarded as an 'organizational field' (DiMaggio & Powell, 1983) that encompasses a broad range of actors who wish to use financial markets for the purpose of enhancing corporate responsibility (e.g., NGOs, environmentalists) and/or to develop products, services and other market activities related to SRI (Arjaliès, 2010; Déjean, Gond & Leca, 2004; Slager et al., 2012; Vogel, 2005).

The French SRI market is an ideal case for our inquiry (Yin, 2009) because it presents the characteristic of being subjected to *both* political and calculative dynamics. On the political side, developing this market involves making 'space' for a new category of products in the asset management marketplace or directly engaging with dominant financial actors such as institutional investors. In Europe, SRI market construction also relates to political issues such as the management of pension funds or employee savings funds (Eurosif, 2014; Jurvale & Lewis, 2009), and prior studies have shown the importance of voting for new regulations in the specific case of France (Crifo & Motis, 2013; Déjean, 2005; Giamporcaro, 2006). On the calculative side, designing SRI products involves evaluating whether stocks are 'socially responsible' (Acquier & Aggieri, 2007), an activity that indicates the uncertainties surrounding the measurement of CSR (Chatterji, Durand, Levine & Touboul, 2015; Gond & Crane, 2010). Prior works have confirmed the central role of calculative agencies in the emergence of the French SRI market (Arjaliès, 2010; Déjean et al., 2004; Gond, 2006).

According to the 2010 US SIF 'Trends Report', professionally managed assets following SRI strategies stood at $3.07 trillion at the start of 2010, a rise of more than 380% over the 1995 figure of $639 billion, the year of the first such report (SIF, 2010). This growth meant that by the end of 2010, nearly one out of every eight dollars under professional management in the US was involved in some type of SRI strategy. Meanwhile, the European SRI market – as 'broadly defined' by Eurosif – increased from €2.7 trillion in 2007 to €5 trillion at the end of 2009 to €6.7 trillion by the end of 2011 (Eurosif, 2012, p. 63) and to €9,8 trillion by the end of 2013 (Eurosif, 2014, p. 21), at which point France was one of Europe's leading SRI markets (along with the UK and the Netherlands), with a size of €1.8 trillion (Eurosif, 2012, p. 63).

In France, between the early 1980s and 1997, only 7 asset management companies commercialized a few SRI fund products, representing a couple of million Euros; by 2003, these figures had grown to 48 asset management companies supplying 108 SRI fund products representing €4.4 billion (Novethic, 2003). The market 'take off' coincided with the creation of the first agency to offer tools for evaluating CSR (Déjean et al., 2004) – by December 2007, the French SRI market featured 175 products and amounted to €20 billion (Novethic, 2007). As we shall see in the empirical analysis, the role of calculability in this market 'take off' did not mean that political games were absent from its emergence. Figure 1 illustrates the evolution of the French SRI market between 1998 and 2012 – our empirical analysis focuses on the period between 1997 and 2008, during which the interactions between calculative agencies and power dynamics were the most obvious.

INSERT FIGURE 1 ABOUT HERE ---
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Data Collection

Our study combines data from multiple sources to document the emergence and development of the French SRI market and to examine the links between power and calculability.

Participatory observations

One of this paper's authors was employed as a researcher for one of the organizations involved in the emerging French SRI market, observing and documenting its development over five years while completing her PhD. Her main mission was to assess the market's various developments, notably by organizing surveys that were sent to asset managers or extra-financial rating agencies but also by meeting the market's key actors to document the primary events and changes in its development. This author was responsible for producing much of the quantified information used in this study to evaluate the SRI market's development, most of which was specifically made accessible to us for the purpose of this research.

This author used the centrality of her organization in the French SRI field to conduct a detailed ethnography of both the organization and the entire French SRI field. Beyond the quantified information she collected and compiled, she took weekly notes about the various meetings, workshops, and conferences she attended and her face-to-face, e-mail and phone interactions with various extra-financial information providers, asset owners and managers, and other organizations involved in the calculability of SRI in France during this period. This privileged position allowed her to observe the power dynamics that have structured the development of the French SRI industry's history 'from the inside'.

Interviews

'In-vivo' observations of the market in the participatory observation context were achieved via a set of 51 in-depth interviews with individuals working for extra-financial information providers, asset management companies or corporate managers in charge of creating and administering the calculative and judgement devices produced by the SRI industry. Some interviews (25) were conducted 'in-vivo' during her participatory observation period, and the other 26 were conducted retrospectively (to account for the SRI market's historical emergence): both types aimed to deepen our understanding of the SRI industry's calculative practices.

A first set of 12 interviews focused on social rating agencies – and in particular on Arese (now Vigeo), the company that pioneered this activity in France and that is known for its key role in the French SRI industry's emergence (Arjaliès, 2010; Déjean et al., 2004). Most (27) interviews were conducted with asset managers engaged in SRI to gather information about the construction and utilization of calculative devices in the SRI context. Finally, 12 interviews were conducted with the actors in charge of providing corporate information to SRI agencies or with managers of organizations that were less central to the French SRI field to obtain a broader picture of their perceptions of market calculability issues. All the interviews (which are listed and dated in Appendix A) were conducted in French (all of the interviewees were French or fluent French speakers) and all but two were conducted between 2000 and 2008. The interviews were taped and transcribed for analysis – in all, they yielded more than 60 hours of data.

Other data sources

We complemented our primary data sources with two types of secondary sources. First, we collected newspaper articles systematically via the Nexis database by using the names of calculative agencies (e.g., Vigeo, Innovest, CIES, Novethic, FRR, ERAFP) as key words or by searching via general SRI-related terms. These searches allowed us to build an extensive database of articles addressing the SRI French market that was used to reconstruct the key events that structured that market. (An extract of this database is provided as Appendix B.)

Second, we used the quantitative information collected by the first author to identify the key market shifts in terms of calculability and SRI practices. These data allowed us, for instance, to document on a quarterly basis the number of analysts working for each asset manager between 2000 and 2012, whether the asset managers used one or several CSR information providers, the levels of SRI assets under management and the main market actors. Other relevant secondary data sources for this research were the guides produced by the ORSE (*Observatoire Français de la Responsabilité Sociétale des Entreprises*) in 2004, 2005 and 2012, which provided detailed information on extra-financial information providers as well as monographs, articles or books focused either totally or partly on the history of SRI in France (Arjaliès, 2010; Déjean, 2005; Giamporcaro, 2006; Gond, 2006; Pénalva-Icher, 2007).

Data analysis

We used several longitudinal data analysis techniques to 'make sense' of our rich data (Langley, 1999) and to build an account of how calculability and power interacted in the French SRI market. First, we built a chronology of the key events that structured the French SRI market's development. This information, together with prior accounts of the market's history (e.g., Arjaliès, 2010; Déjean, 2005) allowed us to identify the most significant market development periods and from this, to define a 'temporal bracketing' (Langley, 1999) of three periods that were homogeneous in terms of dominant actors and structure: a first period of 'market emergence' from 1997 to 2002, which was dominated by one centralized information provider (Arese) and which saw the emergence of CSR calculative devices that made the creation of SRI products by a few SRI asset managers possible; a second period corresponding to a period of 'market consolidation' (from 2002 to 2005) that stemmed from legislation (passed in 2001 and 2002) supporting the development of the market and was characterized by the intense activity of labour unions as well as the increase in and stabilization of the number of CSR calculative devices, SRI products and SRI asset managers; and a third period of 'market mainstreaming' (2006 to 2008), during which large public institutional investors came onto the market, considerably expanding the size of the SRI assets under management. Our quantitative data supported this time bracketing, and the beginning of each period corresponds to an inflexion point in the curves in Figure 1. Table I provides quantified indicators that illustrate the development of the market from 2003 to 2011.

INSERT TABLES I ABOUT HERE

To identify the various facets of power mobilized by actors, we proceeded in two steps. We first built a narrative of the history of the French SRI market from 1997 to 2008 based on our secondary data to identify the plausible uses of power by each macro actor and/or calculative agency over the three phases of market development. Then, we conducted a content analysis of our interviews (Strauss & Corbin, 1998) and internal observations, relying on the typology of facets of power proposed by Lukes (2005) and including coercion, manipulation and domination. Although *coercion* is an easily observable form of power in which some actors have clearly opposed interests, our interviews and primary observations provided us with precious insights about subtler approaches to *manipulation* and *domination* that we could hardly have qualified as such. Moving back and forth between interviewees' insights, our initial narrative, and Lukes' (2005) concept, we documented how macro actors or calculative agencies engaged in forms of *coercion, manipulation* or *domination*, either *over*, *through*, or *against* other actors. It emerged from this analysis that the forces from the macro-social context usually played a key role in the design and transformation of calculative agencies, whereas calculative agencies themselves engaged permanently in micro-power moves to consolidate their position.

At a final stage, we reorganized our findings to build a narrative account of the market's development through the three periods that recognizes the central role of macro actors yet highlights how calculative agencies are involved directly or indirectly in these actors' attempts to shape market building. This narrative constitutes the core of our findings section.

Calculability as Politics in the Construction of the French SRI Market

Market Emergence (1997-2002)

The Macro Context Driving SRI Market Emergence

Newspaper articles mentioning SRI in the mid-1990s usually discuss this notion in relation to two important economic and political debates of the time: the future of the financial management of employee savings and the reform of the French pension scheme. The traditional 'pay-as-you-go' French pension system was then seen as threatened by demographic trends such as an ageing population. The possibility of relying more extensively on financial markets to address these issues triggered numerous debates. Interestingly, both issues involved the French government, labour unions, and a central public French financial institution: the Caisse des Dépots and Consignation (CDC) (literally: the Deposits and Consignments Funds), which operates under the control of the French parliament and whose CEO is nominated by the French President.

Since the early 1990s, executives from the CDC had been exploring the conditions under which 'pension funds' could become a reality in a French political environment within which leftist labour unions are traditionally ideologically opposed to the management of retirement money through financial markets (I.41, I.48).[i] Executives from the CDC ordered studies about the functioning of foreign pension funds. One of these studies, focused on the development and governance of US pension funds, was supplied by Genevieve Férone, a French executive who was then working at KHN, a small consultancy based in California (I.45, I.46). As a follow-up consultancy service, Férone organized a business trip for her executive clients from the CDC and the Caisses d'Épargne (CÉ), another important French banking institution rooted in the cooperative-banking movement. According to interviewees who organized or were involved in this trip, at this time, French executives from the CÉ and CDC became acquainted with the US concept of SRI, as Férone invited members from leading US organizations from the SRI scene, such as managers from the California pension fund CalPERS. The French executives from CÉ and CDC envisioned SRI as a promising idea able to conciliate a pension fund management approach based on financial markets with the notion of 'public service' or 'social progress' important for cooperative banks and left-wing French labour unions. Although SRI was not regarded as a strategic priority by the CEOs of these banks at the time (I.1, I.41, I.48), both CÉ and CDC had vested interest in promoting a concept that demonstrated the potential to use the financial markets to promote the social good in order to maintain their central position in any future reform of employee savings and pension funds.

Making Space for SRI; Creating a Calculative Agency

Despite the interests at stake, the constitution of a space for SRI in the French financial marketplace only indirectly and loosely involved two of the CÉ and CDC 'macro actors' and relates mainly to the design of a calculative agency, which enabled the development of SRI products by making 'CSR calculable' (Callon, 1998; Déjean et al., 2004). Leveraging her contacts at CDC and CÉ after the business trip, Férone obtained from them a consultancy mandate to study the feasibility of developing SRI funds by providing information about CSR for stock rated French corporations. Despite the disappointing outcome of this first market study – according to which French investors were not yet ready to accept the notion of SRI – she managed to convince her CDC and CÉ contacts to financially support the development of a startup focused on the quantification of CSR information, which in 1997 would officially become 'Arese', the first French social rating agency. The novelty of this organization is reflected in the newspapers' accounts of Arese at the time:

> A social evaluation for corporations? The idea, inspired from systems of financial ratings provided by agencies, may seem surprising. Have we ever seen financial markets taking social and ecological criteria into account? Could you imagine Rhône-Poulenc, Essilor, Lafarge-Coppée, Danone, Laboratoire Guerbet or Accor being gauged through twenty ethical criteria … A revolution! This project became a reality under the name of Arese (for Analysis, Research and Social study on Enterprises) which has favourably evaluated' six corporations. (*La Tribune*, 30/05/97)

The power imbalance between the small team of fresh young professionals hired by Férone at Arese and the most powerful French multinational corporations was taken up by most newspapers' reports. This 'David vs. Goliath' context suggested that the corporate side could potentially resist ratings through moves 'against' the calculative agency, even though its two shareholders, the CDC and the CÉ, were, as explained by insider interviewees, seen as 'institutional mammoths' (I.6) in the French financial marketplace. And yet, all of the insiders we interviewed suggest that only one of the French MNCs from the CAC 40 did not spontaneously comply with the rating game and aimed to destabilize the agency by criticizing its method in public forums (I.2, I.8, I.12).[ii] Other informants suggested that this corporation also directly lobbied Arese's shareholders to obtain a revision of its CSR ratings — although unsuccessfully, according to Férone and some analysts (Férone, interview, 2002, I.1; Arese analysts I.2, I.7, I.8).

In contrast with such attempts to coerce the calculative agency, most other rated French corporations accepted the principle of an external rating, and some of them even invited the 'CSR analysts' on-site to provide them with extra information (I.42, I.44). A former analyst of Arese summarized when reflecting on this early period: 'Arese was about to obtain 'what Anglo-Saxon called the *right to rate* [*in English in the French quote*]. This is essential … and this is also permanent work' (Arese analyst, I.2).

Some corporations even used the Arese questionnaires to start designing their internal process for CSR reporting (Head of CSR/SD, Bank Company, I.43). The creation of these corporate relationships enhanced the position of Arese by consolidating its access to primary qualitative and quantitative information that was not necessarily already available. Interestingly, most of the largest CAC 40 French corporations assessed by Arese mentioned information about their Arese ratings in their external communications to demonstrate the soundness of their CSR policy initiatives, establishing Arese as, effectively, the calculative standard for evaluating CSR (Déjean, 2005; Gond, 2006). By 2002, this calculative agency, which did not count more than a dozen analysts, was indirectly shaping how some of the biggest French listed corporations communicated their CSR progress.

The lack of resistance on the corporate side against this 'calculative practice' imposed from the outside confirmed prior insights into the acceptability of quantification and calculated ratings as 'technology of government' (Miller & Rose, 1991; Miller, 1992). The dominance of an ‘ideology of numbers’ (Chelli & Gendron, 2011) certainly contributed to defuse early corporate attempts to mobilize manipulation or coercion against Arese. However, a closer analysis of Arese’s activities suggests that this CSR calculative agency also gained ‘regulative power’ (Slager et al., 2012) through the connection between its rating system and internal and external reporting systems at French corporations and, further, that it had influence over the calculative practices internally developed by asset managers to develop SRI products.

In filling the calculative void that prevented asset managers at French banks from developing SRI products due to uncertainty related to identifying ‘socially responsible’ stocks (Acquier & Aggeri, 2007), Arese both supported the development of new SRI products and generated asymmetric calculative capacities among actors in the financial market. On the one hand, Arese started to build some privileged ties with a few pioneering French asset managers who were the first to agree to pay for this very new CSR rating service.

> It was interesting to meet ARESE CSR analysts at the very beginning because they were happy to meet with us and to really understand how we were going to use their work. It was easy because it was a bunch of young people and it seemed that we were constructing the methodology together instead of being in a simple client-provider relationship. (French Asset Manager, interview, 2002, I.24)

The result of Arese’s calculative activity was a set of quantified scores that could be easily integrated by these pioneering asset managers who wanted to engage in SRI, as they covered, at first, the key French financial indices (CAC 40 and later SBF 120) and later the key European indices (Férone, interview, 2002, I.1).

> Arese, created in 1997, has managed to convince six financial institutions to launch themselves on the ‘ethical’ adventure. Among the first investment funds launched were: Eurosocietal from ABF, in partnership with BNP Entreprises, in May 1999, the MACIF sustainable growth fund in October 1999, 1,2,3 Future’ from the Caisse D’Epargne at the end of the month. “An interest has nowadays emerged at the biggest financial institutions and in a few retail banks,” added Geneviève Férone. (*Le Monde* 27/10/1999)

On the other hand, as described by Déjean (2005), the relationship between Arese and asset managers increasingly took the shape of a ‘delegation’ process, which suggests a successful 'black-boxing' of the calculative device (Latour, 1987): that is, the task of evaluating CSR was generally delegated to Arese, creating a form of dependency on the side of asset managers. This calculative asymmetry influenced how SRI funds were constructed and resulted in a sharp increase in the number of asset management companies from 1997 to 2002 from 7 to 48 (see Table I and Figure 1).

> Thanks to this tool, which has been able, in sum, to make quantitative what was previously qualitative, more and more French [asset] managers set off on the big adventure of ethical funds. (*Les Échos* 03/12/1999)

Geneviève Férone and her team were also quite skilled in using print media to strengthen her firm's reputation. Arese was the subject of over 200 newspaper articles in the mainstream French media during this period (Gond, 2006).

Calculative Infrastructure Centralization and Legal Consolidation

The micro level constitution of the power of Arese and of its power over other calculative agencies (e.g., asset managers, CSR managers at corporations) largely benefited from the loose yet 'symbolically loaded' support of two powerful macro actors (CÉ and CDC) that were interested promoting a concept that could serve their vested interests regarding macro issues of the time (Gond & Boxenbaum, 2013; Zarlowski, 2007). In parallel, the CÉ and CDC together with other macro actors were instrumental in lobbying the left-wing government to shape the legal framework of state-owned pension funds and employee savings. They enrolled the new calculative agency in a variety of ways in this process. For instance, Férone was consulted as an expert during the political debates and ministerial workshops focused on the integration of SRI within the French investment industry. Arese also worked directly for the CDC to generate strategic positions that could be integrated in the future set of laws.

The ultimate outcomes of these political debates were the *Loi Fabius* (Laws 2001-152 and 2001-624) and the *Loi sur les Nouvelles Régulations Economiques* (the so-called NRE law). Law 2001-152 enacted on 19 February 2001 required investors in charge of employee saving schemes to disclose how they took ethical, social and environmental information into account in their investment decisions and in their exercise of shareholder rights. Law 2001624 created the *Fonds de Réserve des Retraites* (pension reserve fund) or 'FRR', a public retirement buffer fund created to prevent any liquidity default in the 'pay as you go' French retirement system fund on the financial markets; the promoters of this fund were again required to take CSR concerns into account in their fund investment decisions (Giamporcaro, 2006). On the other hand, Law NRE consolidated the 'calculative infrastructure' of the SRI market by making mandatory the disclosure of information about social and environmental management policies in the financial statements of all stock rated corporations from 2002 on.

Power Moves and Calculability in Period 1

In starting to build a 'calculative infrastructure' for assessing CSR, the calculative agency launched by Férone established the principle of a 'CSR rating' and demonstrated the potential for asset managers to build SRI products related to these ratings – two necessary conditions to 'perform into being' the SRI market. These ratings could then benefit from the effect of subjectification, an 'ideology of numbers', which is indeed pregnant within the French financial marketplace; however, they first had to be designed to make SRI products, and our analysis suggests that other forms of power were mobilized.

In relation to power moves, we observed that a *domination* attempt succeeded when the power of two macro actors (CDC, CÉ) was *played through calculative agencies* either by supporting the development of the first rating agency to establish the principle of CSR rating and make the design of SRI products possible or by mobilizing this agency's experts to help design laws consolidating the nascent CSR calculative infrastructure. The Arese calculative agency became, through this process and via loose macro and intense micro 'manipulation power games', *a site of power of its own*, positioned as an 'obligatory passage point' (Callon, 1986; Clegg, 1989; Clegg et al., 2006). Through the connection and the ‘calculative asymmetries’ it established across the calculative practice of French corporations from the CAC 40, Arese coerced and gained *power over* other calculative agencies (e.g., asset managers who depended on its ratings). An attempt from one French MNC to resist the coercive CSR rating exercise — a form of *power against* its nascent calculative practices — arose but appears to have failed according to our findings.

Period 2 – Market Consolidation (2002-2005)

Macro Context: Recapturing the Calculative Sites of Power

Starting in 2002, the regulatory transformation led by the Fabius Law convinced some trade union representatives to engage within the SRI market to keep their influence a part of the management and re-designing of employee savings and employee retirement plans. Major figures in labour unions, reflecting a diversity of political orientations, led this movement with the aim of either opposing, or benefitting from, the development of SRI. Central to their moves was the control of the site of power constituted by the new calculative agency.

A striking occurrence of such a top-down move aiming to recapture calculative capacities is highlighted by the highly mediatized fight between the head of Arese, Geneviève Férone, and Nicole Notat, the newly retired head of the CFDT (Confederation French Democratic Confederation of Labour), which was at the time the leading French trade union in terms of numbers of affiliates. As the head of CFDT, Notat had been closely involved in the governance of social security institutions and in a number of labour negotiations (Zarlowski, 2007: 174). She was also criticized by other trade unions for her reformist stance and in particular for her support of retirement reform. At the end of 2002, the ex-CFDT leader announced her intention to create a ‘new’ audit-based CSR rating agency. This announcement was swiftly followed by the announcement that Arese’s shareholders and, at their head, the CDC agreed to merge the company with Nicole Notat's project, giving birth to Vigeo (*Le Monde*, 26/08/02; *Le Monde*, 11/12/02).

Nicole Notat not only convinced the former champions of Arese at the CDC and the CÉ to support her project. She also mobilized her close relationships with some former French *grand patrons* (top CEOs) and prominent political elites to enrol numerous French listed companies, the main French asset managers and trade unions in the Vigeo project by adopting a multipartite ownership structure to support her new agency. This move reflects an interesting repositioning of the calculative agency within the network of relationships, which literally 'bound together' multiple powerful macro actors around the Vigeo project. Once at the head of Vigeo, Notat imposed, in addition to the 'declarative CSR rating' for investors' use already conducted by Arese, a second business offering—an 'audit-based rating' that companies would pay for and that could provide them with a diagnostic tool to measure their CSR performance.

While this new business model was purposively designed to generate new streams of revenue for the agency and to align the interest of French corporations and asset managers to those Vigeo, its new governance structured 'backfired' in the media. Critiques of Vigeo were fuelled by Férone, consultants and academics, who denunciated the agency's independence and objectivity – some French corporations could be simultaneously shareholders and customers of Vigeo services while being rated 'independently' by the same agency – and the risk of Vigeo's hegemonic domination plan for the SRI market:

> 'A corporation has no "honest" reason for putting money in a social rating agency' according to Pascal d'Humières, director of the consultancy Ecodurable. (*Le Monde* 14/01/03)

Micro Dynamics of Calculative Agencies' Competition

Although Vigeo consolidated the former position of Arese by taking over most of its CSR analyst team and all of its client base (*Le Monde*, 06/11/03), several factors boosted the competition for calculating CSR, creating a more competitive and diversified 'market for CSR information' (*La Tribune*, 11/03/03) that was similar to other 'moral markets' such as Fair Trade (Reinecke et al., 2012). First, Vigeo entered into an intense recruitment phase to strengthen its CSR analyst team and its calculative agency (I.12). Second, Arese's former CEO joined the mainstream financial rating firm Fitch and created a competing agency with some faithful ex-Arese CSR analysts: CoreRating (I.10). Third, European and American CSR information providers also stepped in, attracted by the passing of the employee savings and retirement plan laws, which signalled the likely development of the French SRI market (I.10).

As a result, even though Vigeo remained the most used CSR rating agency on the French market from 2003 to 2005 (with a steady 46% to 47% market share), the competition reshaped the calculative asymmetries between CSR rating agencies and asset managers as well as among rating agencies, altering Vigeo's power position. Asset managers started to diversify their sources of CSR information, so that 29% of asset managers used 2 or more CSR rating agencies in 2003, but this figure increased to 39% in 2004 (see Table I).

> BNP PAM is strengthening its SRI management capacities and yesterday announced a partnership with two social rating agencies: Deminor (focused on Corporate Governance) and Innovest (focused on respect for the Environment). These agreements complement a prior partnership with Vigeo. (*La Tribune*, 24/01/03)

Multiplying the source of CSR information and hence redistributing calculative capacities within asset management firms was made possible by the multiplication of CSR calculative agencies. This calculative micro-level trend related to competitive dynamics and was simultaneously reinforced by the domination strategies of French labour unions and the creation of a new calculative agency: Novethic, a subsidiary of the CDC.

Macro and Micro Actors Attempt to Take Control over Calculative Agencies

In 2002, four French labour unions (CFDT, CFTC, CGC and CGT) agreed to form the *Comité Intersyndical pour l'Épargne Salariale* (or CIES), which literally means the "inter-union committee for employee savings". The CIES aimed to help labour unions take the lead on the financial management of employee savings. The CIES decided to create a label that would guarantee, among other things, the 'social quality' of employee savings investment products. Although the possibility for French labour unions to create a label 'theoretically' existed in the legal framework regulating unions since 1945, it had rarely if ever been used in the past (Déjean, 2005). Labour unions strategically mobilized this label to establish their power over the management of employee savings: only asset managers whose investment products were awarded the CIES label would henceforth be allowed to manage employee savings (Déjean, 2005, *La Tribune*, 10/04/02).

The CIES organized several rounds of SRI fund evaluation and rejected almost all of the first round applications from asset managers to obtain a CIES label because the managers lacked internal calculative capacities or relied on a single rating agency.

> In practice, trade unions have preferred employee saving funds whose asset managers had internal SRI capacities and therefore do not rely only on external CSR rating agencies. (*Le Monde*, 02/06/03)

> This is not enough to buy the information of only one social rating agency. An asset manager must possess several sources of CSR information and internal analysis capacities, which means that asset managers need to recruit SRI analysts. (*CGT, Analyse et Documents Economiques*, 97, 2004)

Thus, from 2002 onwards, asset managers became aware that to obtain the label and potentially benefit from the employee savings market driven by the Fabius law, they had to provide evidence that they had developed internal CSR calculability capacities and used diversified sources of CSR information. This strategy by CIES to control employee savings money management rebalanced calculative asymmetries between asset managers and CSR rating agencies to the benefit of the former.

Another interesting attempt to take the lead over calculative agencies during the same period emerged not from macro actors but from the bottom through the initiative of another calculative agency: Novethic. Novethic was created in late 2001 as a subsidiary of the CDC by one of its former employees, Jean-Pierre Sicard. Because Novethic was asked by his CDC shareholder to not compete directly with Vigeo around CSR ratings (I.50), the website and research centre was seeking an opportunity to create a unique calculative position in the SRI market. In 2002, the managers found a concept that resonated: with the growth of SRI funds and a sizeable amount of money invested, new demands for SRI information would likely emerge from customers (e.g., how can customers be confident about the CSR quality of the SRI funds in which their money is invested?). At this stage of the SRI market's development, no regulatory standard existed to help define the quality of an 'SRI fund', which therefore remained invisible to the ultimate clients. In addition, during this period, left-wing papers and radical watchdog organizations systematically described the SRI industry as 'untrustworthy' or 'opaque' (*Le Monde Diplomatique*, 2002; *Politis*, 2004; *Que Choisir*, 2003; *TV show 24 Heures*, 2005).

This context offered a unique opportunity to Novethic to position itself in the calculative chain and to exploit this void by designing a new online tool to enable final investors to evaluate the extra-financial quality of SRI funds. The Novethic SRI rating for the social responsibility of SRI funds was targeted towards final investors based on free access on *novethic.fr*. Similarly to Arese, Novethic had to confront some manipulation attempts from one prominent asset manager who initially refused to be rated and, after finally agreeing, then attempted to aggressively negotiate his rating results. Despite this initial resistance and reluctance to be rated, Novethic, like Arese before, ultimately earned its 'right to rate' SRI funds, notably through the total transparency of its ratings methodology but also through its capacity to impose its SRI ratings through its own website and other press outlets.

> In France BNP PAM, unknown three years before in the SRI investment industry, created an SRI team composed of 4 analysts who spend all their time studying companies in terms of extra-financial criteria (social, environment, corporate governance). This initiative seems to have brought success to BNP PAM, if you consider the very good ratings given by Novethic to its SRI funds. (*Le Monde Argent*, 13/12/04)

A growing number of asset managers agreed to answer the questionnaire put together by the small Novethic SRI rating team, to meet with the Novethic team and to develop ongoing conversations in relation to the yearly revision of the funds' ratings. Hence, despite the lack of interest from the final individual customers initially targeted by the Novethic rating it became established in the marketplace, as asset managers eventually came to use the rating system to analyse their own competitive environment and some even used the results from this judgement device on their advertising brochures.

Power Moves and Calculability in Period 2

In sum, the second period of SRI market construction shows how new forms of *coercion*, *domination* and *manipulation* were engaged in either *by, over*, or *through* calculative agencies with the aim of reshaping calculative asymmetries between agencies and hence transforming power relations. On the one hand, Arese, once the central actor of the calculative infrastructure, was subjected to macro actors' attempts for positions in the market, as illustrated by its taking *over* by Nicole Notat or the CIES attempts to take the lead on the financial management of employee savings *through* controlling the calculative practices of asset managers. On the other hand, the micro-level dynamics of the interactions between calculative agencies fuelled power-dynamics. First, the competition among CSR rating agencies distributed calculative capacities among multiple agencies and transformed the calculative asymmetries between asset managers and calculative agencies to the benefit of the former. Second, by addressing calculative asymmetries between SRI asset managers and final customers through the design of a new device focused on the social quality of 'SRI funds' rather than on 'corporations', Novethic positioned itself as a central and relatively influential actor in the SRI market space. These power moves influenced in return the macro development of SRI: macro actors (e.g. French labour unions) with a vested interest in the existence or control of CSR and SRI calculative agencies asserted their domination in the shaping and consolidation of the SRI market.

Period 3 – Market Mainstreaming (2005-2008)

Stabilizing Forces in the Macro Context

Starting in 2005, the implications of the Fabius law shaped the market with the creation and launch of two new state-owned public funds within the SRI marketplace: the FRR and the *Établissement pour la Retraite Additionnelle de la Fonction Publique* (ERAFP) (publicservice supplementary retirement pension body). Although established by the French legislator in 2001, neither organization entered the SRI market before 2005. The FRR's executive board, chaired by the Chief Executive Officer of the CDC and the chairman of the FRR supervisory board (which included legislators, labour and management stakeholders, and representatives of the ministries), presented the FRR in the media as an opportunity to enhance 'socially responsible' types of investment (*L'Agefi*, 11/03/04; *Figaro Economie* 12/03/04). This positioning was aligned with the government's political orientation around the Fabius Law. The 'SRI' component of the legal framework defused potential resistance on the part of the most radically 'anti-financial market' labour unions (e.g., CGT) represented in the FRR's supervisory board. Again, SRI served to demonstrate that public investors could engage with financial markets without betraying 'social' ideals.

> The FRR is an inter-generational tool; it cannot be indifferent to SRI, which promotes a sustainable development for future generations. (Raoul Briet, FRR chairman of the FRR, interviewed by *La Tribune*, 28/06/2005)

At the end of 2005, the second public state-owned fund, the ERAFP, publicly 'converted' to SRI (*ERAFP press release*, 06/12/2005). Also created in 2001 by the French Retirement Law, the ERAFP can be considered to be the 'first' French state-owned pension fund; its remit was to capitalize the additional retirement contributions of France's 4.5 million public servants on the financial markets. Criticized by some trade unions as a 'serious breach' of the French 'pay as you go' retirement system (CGT 2004), the ERAFP executive directors stressed that, from 2005, its full allegiance to inter-generational solidarity would be expressed via its commitment to SRI:

> We have made the choice to invest only in SRI because we think that this approach is aligned with our Common Interest duty and corresponds to our public service vocation. (Phillipe Caila ERAPF director interviewed by *La Tribune* 04/07/2006)

Meanwhile, the entry of these major players was creating excitement within the SRI market:

> In the small French field of SRI, there is hope that the FRR commitment is going to boost SRI investing. Up until now, only a few institutional investors have been converted. (*Le Monde* 29/06/2005)

The SRI activities of the FRR and ERAFP and of a few institutional investors had a massive impact on the SRI market's development from 2005 to 2008: the total amount of SRI assets managed in France increased from 10 billion to 20 billion (see Figure 1 and Table I). A long-lasting 'institutional market' for SRI in France was now becoming established, and its main promoters started engaging with the calculative agencies.

New Macro Actors' Reorganization of Calculative Capacities

In June 2005, the FRR, located within the CDC offices, launched a much awaited SRI 'call for tender' for €600 million. To prepare for this event, the FRR consulted a wide range of CSR and SRI calculative agencies but very quickly asserted its willingness to lead the future of SRI in France through its influence *over* and *through* calculative agencies:

> We need to play a pioneering role on some subjects. Our SRI call for tender can bring a methodological contribution to the development of the SRI market and its actors: asset managers and CSR rating agencies. (Raoul Briet, FRR chairman interviewed by *La Tribune*, 28/06/2005)

More than 40 local and foreign asset managers answered the first FRR call, and when it unveiled the list of 6 winners in May 2006, only one French asset manager (AGF Asset Management) was selected among a list of Belgian, British and Swiss companies. That same year, the FRR unveiled a list of its five SRI principles and nominated three CSR ratings agencies, including the French Vigeo, to assess how its five SRI principles were respected by the asset managers managing its SRI funds.

In 2006, the ERAFP board – composed of civil servants, labour and management representatives nominated by the French State for a three year period – met every two months to finalize the draft of its SRI charter and to debate how the charter would be practically implemented via an in-house 'SRI matrix' ('*Référentiel ISR*'). Novethic was invited to attend the ERAFP board meetings in its capacity of CDC internal SRI consultant, the CDC being in charge of the administrative but also financial management of the ERAFP bond portfolios.

More than 30 asset managers answered the ERAFP call to manage equity portfolios. A year later, after a short listing of 16 candidates, the ERAFP finally selected 2 prominent French SRI asset managers: BNP Paribas AM and IDEAM, the SRI subsidiary of Credit Agricole Asset Management. In addition, the ERAFP issued a tender call for a CSR rating agency that would be in charge of managing its 'SRI matrix', a tool that allows screening through non-financial criteria and weighting of the stocks in its portfolio. This decision further altered calculative capacity distribution within the market (I.51).

> When we won the ERAFP call for tender to manage the SRI matrix, we knew that asset managers would have to come back to us. They will have to pay the 70.000 euros we asked for our CSR ratings. Indeed if you wanted to get the chance one day to win an investment mandate from the ERAFP, you will have to have a clear knowledge of the Vigeo CSR rating system since the ERAFP SRI matrix resulted in being completely linked to the Vigeo CSR rating system. (Vigeo ex-employee, interview November 2013)

Thanks to these power moves by macro actors in relation to calculative agency, Vigeo was again repositioned as an 'obligatory passage point' for asset managers. At the end of 2006 (Table 1), Vigeo reached its highest market share since its creation in 2002: 62%.

Micro Actor Attempt to Recapture the Lead in SRI Market Development

Vigeo not only achieved quasi-domination of the market thanks to moves by macro actors that consolidated its institutional investor client base, but the calculative agency also pro-actively engaged in moves to exploit the calculative asymmetries between asset managers and their ultimate clients. To make its business model financially sustainable based on its CSR ratings services for investors, Vigeo drastically increased the membership fees for asset managers, leading to some resistance on their part. Vigeo's newly hired management team was aware that a 'belligerent mood' was rising among asset managers (I.51, I40). According to several of our interviewees, this tension led to an attempt by some asset managers to incentivize their traditional information providers, the brokers, to provide an alternative source of CSR information by increasing their brokerage fees (*La Tribune*, 10/05/2005).

> With the arrival of Nicole Notat, price structures on the CSR market in France changed. Prices went up drastically, which did not please French asset managers. In my opinion, this is why from that moment they pushed so hard for brokers to get into the game, so that CSR information would be part of the package of services they already provided. But actually considering the costs of creating a CSR information database, you cannot say today that brokers are in competition with CSR information providers. Actually, we could become their clients to get primary CSR data that we could then analyse ourselves. (Interview with Broker, 2005)

Vigeo was also actively on the lookout for a way to exercise its power over its reluctant and narrow French investor client base and to consolidate the influence of its calculative practices within the marketplace. To this end, its business team developed the 'PLANET RATINGS®' project. PLANET RATINGS® was supposed to calculate the aggregated CSR quality of stocks included in the European equities investment portfolios commercialized in France based on the Vigeo CSR ratings system. This new project's successful outcome was envisioned by Vigeo as follows: asset managers will have to pay a fee when they use PLANET RATINGS® for communication and advertisement purposes, and this will lead a larger pool of investors to buy the Vigeo rating services to obtain a good 'planet rating'. Vigeo partnered with Morningstar, an organisation specialized in financial ratings that could provide access to the equity funds' exact portfolio stock compositions without having to ask asset managers to disclose information, which they were known to be reluctant to communicate (Hawken, 2004). The leadership of Vigeo also widened the partnership to Novethic, which ended up playing a relatively minor role in this project.

This project failed because it triggered an aggressive boycott by asset managers, who collectively exercised their power against the rating agency. These managers were determined to prevent Vigeo from consolidating its market power by having the final word about the CSR quality of their own CSR calculative practices.

> We use at least 3 CSR information providers to build our internal analysis on the companies we invest in. I do not see how a rating system built on the CSR ratings of only one of my CSR information providers can give any true measurement of the overall CSR quality of our fund. And what if I was not using Vigeo at all? (Participatory observation field notes, 17/05/05, Paris, Asset manager's comments during the public presentation of PLANET RATINGS®)

Power Moves and Calculability in Period 3

This period of market stabilization suggests that even though actors such as CSR rating agencies and asset managers constitute *sites of power* and can, at the micro level, engage their calculative capacities to consolidate and expand their influence *over* or *against* other calculative agencies, competitive dynamics make it difficult to establish and exploit lasting calculative asymmetries. Neither Vigeo through its 'Planet Rating' project nor asset managers through the inclusion of brokers was able to reshape calculative practices. Rather, the strategies of macro actors such as the ERAFP and the FRR were central to the consolidation of lasting power positions for the calculative agencies in the markets during this period. These macro actors operated either *over* or *through* calculative agencies by grating 'rights to calculate' on their behalf to specific CSR rating agencies (e.g., Vigeo) as well as 'rights to manage SRI' to specific asset managers (e.g., IDEAM). As a result of these macroactors' domination power moves, Vigeo maintained its status of 'obligatory passage point' (Callon, 1986; Clegg, 1989).

Accordingly, macro forces emerging during the emergence and consolidation periods of market development, such as the legalization of the market emerging from the active lobbying of macro actors (e.g., governmental and public bodies as well pro-SRI labour unions), played a crucial role in the subsequent definition of how power played *against, over* or *through* calculative agencies by empowering the two public institutional investors that could consolidate or undermine the power positions of specific calculative agencies on the SRI market.

Discussion, Implications and Conclusions

Our empirical account of the emergence, consolidation and mainstreaming of the French SRI market elucidates some of the processes whereby actors' power games at the micro and macro levels interact to shape the constitution of a new market. In contributing by clarifying how power and calculability interface in the process of market construction, this study has resulted in a number of insights into *how power is engaged through calculability* and *how calculative agencies act as a central 'nexus' connecting the micro and macro dynamics of power constitution in the process of market building*. We discuss below the theoretical implications of these findings and suggest areas for future research.

How Power Plays through Calculative Agencies

Our findings first contribute to power studies in organizational analysis by enriching current understanding of how power interfaces with calculability. Prior studies of how power plays through calculability have primarily relied on a Foucauldian view of power as 'subjectification', which emphasizes the constitution of subjects through calculative agencies and calculative practices (Miller, 1992; Power & Miller, 2013) and *de facto* neglects other facets of power such as those conceptualized by Lukes (2005). For Miller (1992), calculative indicators are usually 'loosely related to each other', and their failure to evaluate is not problematic as their mere existence suffices to support a neo-liberal mode of governance.

Lukes (2005) convincingly argued that such views ‘de-face’ power by neglecting to investigate *who* mobilizes power and by overlooking the fact that *attempts to mobilize power through calculability may succeed or fail*, and this may matter, especially in a marketplace context.

In contrast with prior Foucauldian perspectives, our analysis documents how calculative agencies actively produce, mobilize or support three alternative forms of power – *coercion*, *manipulation* or *domination* – through their activities in the marketplace and show how actors exercise their power *over*, *through* or *against* these calculative agencies. Table II provides a summary of the main power moves related to calculative agencies documented at each period through our longitudinal account, showing which actors engage which facet of power in relation to the calculative agencies and, more importantly, whether these mobilizations of power *succeeded* or *failed*.

INSERT TABLE 2 ABOUT HERE

Several patterns emerge from this analysis, providing new insights for the analysis of how power plays through calculability. First, our results suggest that *calculability involves the production of power* and that *calculative agencies actively mobilize the power they constitute*. Calculative agencies emerged as sites of power construction that compete with each other (through moves over or against other agencies) to shape calculative asymmetries to their own benefit. They may engage autonomously in multiple forms of power to consolidate their position. According to our findings, manipulation, notably through repositioning to become an ‘obligatory passage point’ (Callon, 1986; Clegg, 1989), was the dominant facet of power engaged by calculative agencies such as Arese / Vigeo or asset managers to consolidate their position in the SRI marketplace, whereas *coercion* and *domination* were used to a lesser extent and usually less successfully by these micro actors. Micro actors’ capacity to establish their position ‘by themselves’ indeed appears to be relatively limited: in our case, they depended upon their capacity to connect with macro actors to achieve lasting central positions.

A second pattern suggests that *calculative agencies do not always succeed in achieving power* and that *specific attempts from calculative agencies to enhance their power can be undermined and/or resisted, notably by other calculative agencies*. Indeed, we noticed several failed attempts to resist calculability (e.g., asset managers, Periods 2 and 3). These failures, such as the inability of MNCs to resist the calculative agency's imposed rating (Period 1), could be interpreted by relying on an approach to power as 'subjectification': the neo-liberal 'ideology of numbers' certainly facilitated the acceptance of the CSR or SRI rating concept by MNCs and asset managers (Chelli & Gendron, 2013).

Yet, even though all calculative agencies benefited from the traction of a dominant 'ideology of numbers' in financial markets, not all of their power moves were successful, as shown for instance by their inability to impose new calculative practices through domination or manipulation (e.g., brokers' project by asset managers and Vigeo's planet rating project by the CSR rating agency in Period 3). Our results suggest that subjectification and the 'systemic power' it creates could play in relation to other forms of power such as coercion, domination and manipulation. *Manipulation* and *domination* (e.g., mobilization of media, construction of strong institutional links) appear to be more likely to be successful when deployed *by* and *through* calculative agencies, as shown by the establishment of the principle of CSR ratings in Period 1 or the imposition of the SRI rating concept in Period 2.

A third pattern that emerges from the comparison of power deployment across the three periods of SRI market construction is as follows: *calculative agencies were systematically seen by macro actors such as labour unions, state-owned banks, or public pension funds as crucial 'sites of power' to be controlled to shape the market*. Macro actors aimed to exercise their control *over* or *through* these agencies, and most attempts to exercise power through manipulation or domination that we documented from macro towards micro actors were successful, at least temporarily (see Table II). The labour unions as well as the ERAFP and FRR completely redistributed calculative capacities to build their positions in the market, thus reshaping the calculative asymmetries that are central to calculative agencies' power deployment throughout the three stages of market development. This suggests that solely examining macro actors' politics in relation to rule making or governance structure may not fully capture the process of market construction (Fligstein, 1996, 2001), as these activities may have to focus on calculative agencies and practices to effectively influence market making and consolidate power positions.

As a whole, our analysis demonstrates the relevancy of Lukes' (2005) perspective on power to uncover how beyond subjectification, power plays through calculability via manipulation, domination and, to a lesser extent, coercion. Our results indicate the need to more systematically consider 'calculability as politics' in the process of market construction. Hence, these results point toward the profound yet neglected political and critical potential of the performativity agenda to uncover how power plays out within markets through the permanent shaping and reshaping of calculative asymmetries and the materialization of calculative devices (Vosselman, 2014). Future studies could leverage this insight to 'unpack' the micro dynamics of multiple forms of power constitution by focusing on prominent calculative agencies within and across markets beyond the case of Socially Responsible Investment.

Bridging the Micro and Macro Dynamics of Market Making

In line with recent calls (Poon, 2009; Van Hoyweghen, 2014), a second contribution of our study is to the social and organizational studies of markets by showing how the activities of calculative agencies connect the micro process of power constitution through calculability at the agency level to the macro-level power strategies of actors such as labour unions or state owned banks involved in political debates related to macro social and political issues such as the creation and management of public pension funds. Following the political studies of the market *à la Fligstein*, our narrative suggests that major macro actors such state-owned banks, governments and labour unions with vested interests in the existence (or failure) of an SRI market played a central role in its constitution by shaping its legal context and even creating *de facto* some of its most powerful investment players. Yet, our results also show that the power of macro actors was mainly exercised through the active construction and mobilization of calculative agencies. Calculative agencies evaluating the 'socially responsible quality' of stocks led to the purposive design of SRI funds at the early stage of market construction, confirming the necessity of engaging in calculative activities to 'bring into being' a new market, as suggested by the tenants of the '*performativity of the economics*' thesis (Callon, 1998; Callon & Muniesa, 2005).

More specifically, Table II shows the presence of a recurrent cycle moving first top down, from macro actors towards the calculative infrastructure, to enable the production of market activities, and then bottom up, from calculative practices to the macro context, through the enrolment and mobilization of calculative agencies in activities consolidating market construction, such as the constitution of a new legal framework between Periods I and II. In parallel, the constitution of calculative agencies created new 'power sites' at the micro level of analysis that macro actors aimed to either capture or to influence to drive the process of market building and to align it with their own vested interests.

Our study hence seeks to sketch a richer theorization of how micro and macro dynamics of actors influence interplay in the process of market making through the mediation of calculative agencies (Krippner, 2005; Poon, 2009) and also through the autonomous development of those calculative capacities by calculative agencies that provide them with power. In so doing, we address two lasting concerns of the 'market-as-politics' and ‘marketas-calculative device’ streams of studies. First, our results suggest that macro actors, even when they are especially powerful (e.g., CÉ and the CDC in our case), can hardly build new markets without regulating calculability and/or actively mobilizing calculative agencies from these markets. To some extent, our analysis suggests adding to Fligstein’s view of markets a ‘conception of calculative forms of control’ as a core ingredient in the process of market construction together with ‘governance rules’ and the ‘concept of corporate control’ (Fligstein, 1990, 1996). Second, our theorization of the autonomous deployment of the power game by calculative agencies also moves the performativity studies of markets beyond their current focus on the process of ‘market stabilization’ (Orverdevest, 2011) by acknowledging the emerging, disruptive and uncertain nature of calculative agencies’ attempts to expand and consolidate their influence through calculative practices. Calculative agencies, although powerful, can fail to consolidate and enhance their domination over other market actors, the maintenance of their position involves continuous work, and their status can be radically transformed through macro interventions, as we have observed in our case during the second and last period of market development.

As a whole, our study illustrates the value of cross-fertilizing performativity and power studies of markets and organizations to theorize the processes whereby calculability and power interact. In considering multiple facets of power – beyond subjectification – to investigate how calculative agencies, tools and devices are involved in the political constitution of markets, our analysis usefully complements current approaches to ‘calculability as government’ by uncovering the potential role of micro-level ‘calculative lobbying’ and of macro-level ‘government of calculability’ in market construction. We hope this broader theoretical perspective on ‘calculability as politics’ will stimulate further research on the making of markets, within and beyond the context of socially responsible investing.

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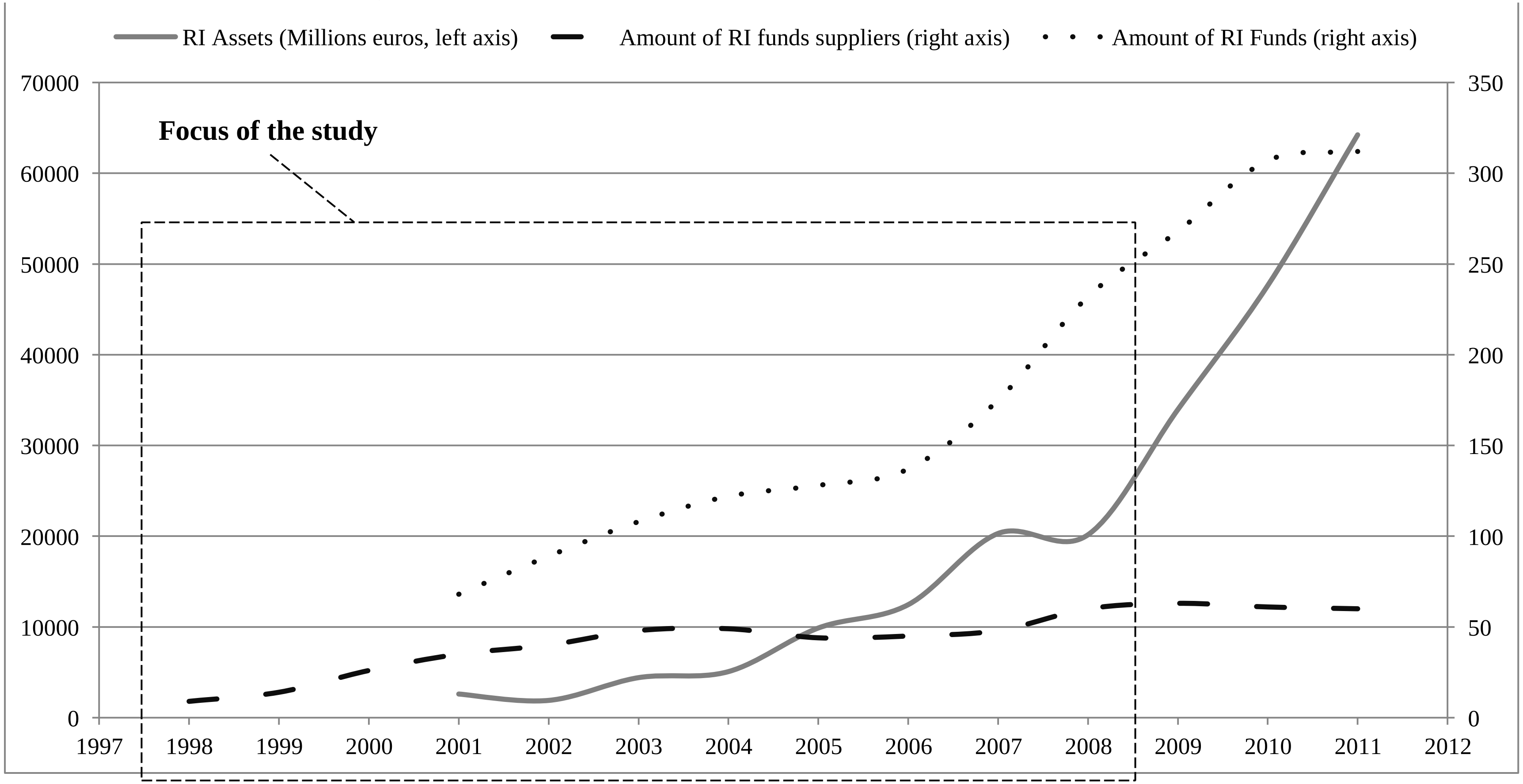
Figure 1. The Take-off and Development of the French SRI Market*



**Source: Novethic Barometer in June 2003 for annual availability of SRI mutual funds in France.*
Values before 2003 are estimated based on other secondary sources (Association Francaise de Gestion, AFG).

TABLE I. Key Metrics and Changes in the French SRI Market 2003-2009*

*Indicators***	December 2003	December 2004	December 2005	December 2006	December 2007	December 2008	December 2009

Amount of : SRI asset managers SRI funds SRI assets % fixed income	48 108 4,4 billions 17% fixed income	49 122 5 billions 18% fixed income	44 128 9,8 billions 27% fixed income	45 137 12,4 billions 29% fixed income	48 175 20 billions 23% fixed income	60 232 20 billions 45% RI fixed income	63 262 33 billions 64% fixed income
The 3 leading asset managers on the French SRI market (AUM in billions Euros)	-BNP PAM (0,9) -Dexia AM (0,8) -UBS (0,4)	- Dexia AM (1) -BNP PAM (0,9) -Macif Gestion (0,6)	-Dexia AM (3) -AGF AM (1,5) -BNP PAM (1,2)	-Dexia AM (2,5) -Natexis AM (2) - AGF AM (1,3)	- Natixis AM (3,2) - Dexia AM (2,5) - Robeco (2,4)	-Allianz GI (2,9) -Natixis AM (2,7) -Dexia AM (2,4)	-Amundi (8) -Natixis (3,5) -Allianz GI (9)
CSR ratings agency leaders (clients share)	Vigeo: 46% Innovest: 5% Eiris : 9%	Vigeo: 47% Innovest: 10% Eiris: 13%	Vigeo: 59% Innovest: 18% Eiris: 11%	Vigeo: 62% Innovest: 24% Eiris: 9%	Vigeo: 58% Innovest :27% Eiris: 6%	Vigeo:52% Innovest: 32% Eiris: 14%	Vigeo: 45% Risk Metrics (Innovest shares): 38% Asset 4: 14% Eiris: 14%
Number of CSR rating agency used by asset managers	0: 10% 1: 46% 2 : 19% 3 and more: 10% Not known: 15%	0: 8% 1: 47% 2: 23% 3 and more: 16% Not known: 6%	0: 5% 1: 48% 2: 18% 3 and more: 20% Not known: 9%	0: 2% 1: 42% 2: 25% 3 and more: 22% Not known: 9%	0: 2% 1: 33% 2: 25% 3 and more: 27% Not known: 13%	*Not available via Novethic barometer*	*Not available via Novethic barometer*
Size of SRI team at asset management team	No team: 40% 1: 17% 2 : 21% 3 and more: 10% Not known: 12%	No team: 35% 1: 23% 2 : 22% 3 and more: 14% Not known: 6%	No team: 32% 1: 25% 2 : 23% 3 and more: 13% Not known: 7%	No team: 36% 1: 18% 2 : 36% 3 and more: 13% Not known: 4%	No team: 33% 1: 19% 2 : 21% 3 and more: 19% Not known: 4%	*Not available via Novethic barometer*	*Not available via Novethic barometer*

**Sources: Novethic December SRI Barometers 2003 to 2011*

*** Abbreviations: SRI: Socially Responsible Investment; AM: Asset Management.*

Table II. Overview of the Main Uses of Power*

	Period 1 – Market Emergence (1997-2002)			**Period 2 – Market Consolidation (2003-2005)**			**Period 3 – Market Stabilization (2005-2008)**		
Facets / Uses of power	**Coercion**	**Manipulation**	**Domination**	**Coercion**	**Manipulation**	**Domination**	**Coercion**	**Manipulation**	**Domination**

POWER *OF* CALCULATIVE AGENCIES		Positioning of Arese as an obligatory passage point in the calculative network [**Temporary success**]			CSR rating agencies and asset managers struggle to be at the centre of the calculative chain [**No clear outcome**]	Macro-actors bounded to the establishment of the principle of CSR ratings and of a SRI market [**Success**]		Reinforcement of the power of CSR calculative agencies as the existence of a large SRI market is secured [**Success**]	Acceptance of the creation of public pension funds (FRR, ERAFP) facilitated by the existence of SRI [**Temporary success**]
POWER *OVER* CALCULATIVE AGENCIES	Power of Arese over asset managers due to the calculative asymmetry [**Temporary success**]				Trade unionist Nicole Notat captures the Arese calculative agency through her network (Vigeo) and changes its governance [**Success**]			ERAPF and FRR take power *over* asset managers through their SRI call for tenders [**Success**]	Vigeo attempts at dominating asset managers [**Failure**]
POWER *THROUGH* CALCULATIVE AGENCIES		Mobilization of Arese and her leaders to promote the *Law on New Economic Regulations* [**Success**]	Creation of Arese by CDC and CÉ to promote the constitution of a market for employees' savings and pension funds [**Success**]		Novethic create a calculative agency to define the qualities of an ISR fund [**Success**]	CIES (labour unions) use of labels to shift calculative asymmetries in the market to the benefit of asset managers [**Success**] CDC consolidates SRI market through the creation of Novethic [**Success**]		FRR and ERAPF use Vigeo to design a new SRI matrix [**Success**] Labour unions imprint their interests in the FRR and ERAPF [**Success**]	
POWER *AGAINST* CALCULATIVE AGENCIES	Resistance to the CSR ratings from a French MNC [**Failure**]	Attempt at manipulating CSR ratings through agency [**Failure**]		Resistance to Novethic from fund managers [**Failure**]	Férone creates a competing agency and contest the Vigeo model [**Failure**]		Direct resistance of asset managers to 'Planet Rating' [**Temporary success**]	Asset managers undermine Vigeo by bringing-in brokers [**Partial failure**]	

**Abbreviations: CDC: Caisse des Dépôts et Consignations; CE: Caisse d'Épargne; CSR: Corporate Social Responsibility; ERAPF: Établissement pour la Retraite Additionnelle de la Fonction Publique FRR: Fonds de Reserve des Retraites; MNC: Multinational Corporations; SRI: Socially Responsible Investment.*

Appendix A – List of Interviews

Organization	Function of the Interviewees	Length and type (V = In-Vivo; R = Retrospective)
CSR rating agencies (12)		
1. Arese	Former CEO of Arese	1h00 (R)
2. Arese	Analyst / in charge of the method (3 meetings)	7h00 (R)
3. Arese/Vigeo	Analyst	1h30 (R)
4. Arese/Vigeo	Analyst	1h30 (R)
5. Arese	Analyst	1h00 (R)
6. Arsese	Analysts and Business Development Manager	1h00 (R)
7. Arese/Vigeo	Analyst	1h30 (R)
8. Arese	Anlayst	1h00 (R)
9. Standard's and Poors	Financial Analyst	30 mVn (R)
10. Core Ratings	Analyst	2h00 (V)
11. CFIE	Head (2 meetings)	2h00 (R)
12. Vigeo (former Arese)	Analyst	1h30 (V)
Asset Managers (27)		
13. ABF	Fund Manager	1h00 (V)
14. AG2R	RI Analyst	2h10 (V)
15. Banque Populaire	Asset manager	1h00 (V)
16. BFT Gestion	Asset manager	1h00 (V)
17. BNP PAM	Asset manager	1h00 (V)
18. BNP PAM	Head of the RI analysts team	2h00 (V)
19. CAAM	Asset manager	2h00 (V)
20. Caisse d'Epargne	Asset Manager	30 mVn (R)
21. CLAM	Asset Manager (RI)	1h00 (R)
22. Credit Cooperatif	Asset manager	1h00 (V)
23. Credit Cooperatif	Asset manager	1h00 (R)
24. Groupama	Asset manager	1h10 (V)
25. HSBC	Asset manager	2h00 (V)
26. HSBC AM	Asset manager	2h00 (V)
27. IDEAM	Bond Fund manager	1h00 (V)
28. IDEAM	Fund manager	1h00 (V)
29. IDEAM	Head of RI Research	3h00 (V)
30. IDEAM	RI analyst	2h00 (V)
31. IONIS	RI analyst	1h30 (V)
32. Macif Gestion/	CEO and Fund manager	2h30 (V)
33. Meeschaert	Fund manager	2h00 (V)
34. Meeschaert	Fund Manager and RI analyst	2h30 (V)
35. Prado Epargne	RI team	40 mVn (R)
36. Sarasin Expertise	Fund manager	1h00 (V)
37. Sogesposte	Asset manager	1h00 (V)
38. Sogeposte	Head of RI	1h00 (V)
39. UBS	Asset Manager	40 mVn (R)
Other key stakeholder of the French RI field (10)		
40. CIC-Securities – Broker	Head of SRI Research	2h30 (V)
41. Caisse des Dépôts	Technical Expert	30mVn (R)
42. Insurance Compnay (CAC 40)	Head of CSR / sustainable development	1h00 (R)
43. Bank Company (CAC 40)	Head of CSR / sustainable development	1h00 (R)
44. Energy Company (CAC 40)	Head of CSR / sustainable development	40mVn (R)
45. Consultancy (Paris)	Consultant having worked for Arese	1h00 (R)

46. Consultancy (California)	Head of consultancy whithin which former Arese CEO worked	45mVn (R)
47. AFG-ASSFI	Head of a French think-tank on RI	1h00 (R)
48. CDC / Novethic	Administrator of Arese (1999-2002)	40mVn (R)
49. ONU	Former member of the Arese board (CDC)	1h00 (R)
Total French Case	**49 persons in 33 different organizations**	**60h15mVn (24R; 25 V)**

Appendix B: Selection of news articles extracted from generalist and financial press and used to build the case narrative

Journal	*Date*	*Main topic*
CSR information calculative devices		
La Tribune	30/05/1997	CSR analysis challenges: Arese launch
Le Point	17/09/1999	CSR analysis challenges: Arese launch
Le Monde	27/10/1999	CSR analysis and RI funds growth
Les Echos	03/12/1999	CSR analysis and RI funds growth
Le Monde	26/08/2002	CSR rating agencies competition: Vigeo launch
Liberation	14/10/2002	CSR rating agencies competition: Vigeo launch
Le Monde	11/12/2002	CSR rating agencies competition: Vigeo launch
Le Monde	14/01/2003	CSR analysis challenges: Vigeo business model
La Tribune	24/01/2003	CSR rating agencies competition: a market for CSR info
La Tribune	11/03/2003	CSR rating agencies competition: a market for CSR info
Le Monde	06/11/2003	CSR rating agencies competition: Vigeo rise
La Tribune	13/11/2003	CSR analysis challenges
La Tribune	10/06/2005	CSR analysis and brokers
La Tribune	15/03/2006	CSR analysis and brokers
La Tribune	27/06/2008	CSR rating agencies competition
RI funds calculative devices and CIES Label		
La Tribune	12/03/2002	Label CIES RI requirements
La Tribune	19/03/2002	Label CIES RI requirements
La Tribune	08/04/2002	Label CIES RI requirements
La Tribune	10/04/2002	Label CIES first round selection results
Le Monde	11/04/2002	Label CIES first round selection results
La Tribune	06/06/2002	Label CIES second selection round results
La Tribune	11/06/2002	Label CIES second selection round results
Le Monde	12/06/2002	Label CIES second selection round results
La Tribune	17/12/2002	Label CIES third round selection process
La Tribune	04/03/2003	Label CIES third round selection process
La Tribune	17/03/2003	Label CIES third round selection results
Le Monde	02/06/2003	Label CIES RI requirements
Le Monde	10/05/2004	Label CIES RI requirements
Le Monde	25/10/2004	Label CIES RI requirements
La Tribune	07/05/2005	Launch of new CIES labellisation campaign and RI requirements
Novethic		
Le Monde Argent	01/11/2004	Novethic RI rating
Le Monde Argent	13/12/2004	Novethic RI rating
Le Monde	26/09/2006	Novethic RI rating
Le Monde	11/ 10/2007	Novethic RI rating
Le Monde	11/05/2008	Novethic RI rating to be turned in a label
RI commitment of state owned fund: ERAFP/FRR		

L'Agefi	11/03/2004	FRR and RI
Le Figaro Economie	12/03/2004	FRR and RI
La Tribune	28/06/2005	FRR and RI
Le Monde	29/06/2005	FRR and RI
La Tribune	30/08/2005	FRR and RI market growth
La Tribune	05/11/2005	RI rise and state owned funds
Le Monde	09/01/2007	ERAFP and CSR information provider
La Tribune	30/01/2007	ERAFP and RI
La Tribune	04/07/2006	ERAFP and RI
La Tribune	14/03/2007	ERAFP and RI asset manager selection
La Tribune	20/03/2007	ERAFP and RI

Source: Nexis Databasis.

Appendix C. Chronology of Key Events

Year	Regulative / Governance Context	Calculability Domain
1997-8		Creation of ARESE as a joint venture by Caisses d Epargne and Caisse des Depots
1999		Launch of first RI funds using ARESE CSR Ratings: ABF Eurosocietale , Macif Sustainable Growth, Ecureuil 1,2,3 Future
2001	19 February: Law 2001-152: Employee Saving Scheme (FCPE) are obliged to disclose how they take ethical, social and environmental criteria into account in their investment decision/exercise of shareholder right May 2001: Law 2001-420 makes the obligation for French listed companies to publish CSR information in their annual reports compulsory July 2001: Law 2001-624 creates the FRR, the first French public retirement fund requires that the investment policy general orientation disclose how ethical, social, environmental factors are taken into account August 2003: French retirement Law ('Fillon Law') implements a legal framework to promote pension funds.	Sept 2001: Creation of Novethic, subsidiary of Caisse des Dépôts
2002	January: In the framework of the Fabius Law, 4 French trade unions (CFDT, CFTC, CGC, CGT) create an inter union committee for employee savings, the CIES and create a new label for RI products	Vigeo is created by Nicole Notat ex secretary of CFDT major French trade union Creation of Core Ratings by Genevieve Ferone ex director of Arese Launch of Novethic RI Ratings First run of the CIES label
2003	July: FRR call for tender on active equities portfolios with some minor RI requirements	US Innovest and British EIRIS enter the French RI Market Second Run of the CIES label
2004	Following the Fillon Law, ERAFP, the first French State owned pension fund, becomes functional	
2005	FRR call for tender for RI Managers ERAFP publicly convert to RI	Vigeo buys the Belgian group Ethibel and becomes Vigeo Group Launch of the Enhanced Analytic Initiative Innovest buys Core Ratings March ; Planet Ratings Project by Novethic, Vigeo and Morningstar

2006	April: ERAPF call for tender to hire a CSR rating agency for defining an internal RI strategy on fixed income May: Unveiling of the successful AM for the FRR call for tender June: ERAFP call for tender for RI asset managers on listed equities October: ERAPF selects Oekom and Vigeo Group to work on RI fixed income portfolios.	Group Vigeo buys Avanzi SRI Research and becomes Vigeo SAS Broadening of the Novethic rating to RI fixed income products
2007	May: Unveiling of the list of AM winner for the ERAFP call for tender	Oekom German group sign an alliance with Vigeo to cater for ERAFP call on fixed income assets

Footnotes

i To facilitate the reading of the narrative, we use abbreviations to refer to specific interviewees. The letter 'I' stands for 'Interviewee' and number indicated refers the number reported in the list of interviews provided in Appendix A.

ii The CAC 40 is a financial index used as a benchmark French stock market index. This index represents a capitalization-weighted measure of the 40 most significant values among the 100 highest market capitalizations on the Euronext Paris (formerly the Bourse of Paris). Its composition is reported on the Euronext website: https://indices.euronext.com/en/products/indices/FR0003500008-XPAR.