Chaire Finance Durable et Investissement Responsable

Report for the year 2016

ASSOCIATION FD&IR

ÉCOLE POLYTECHNIQUE

The research projects of the Chaire FDIR are run by the IDEI-Toulouse School of Economics and the Economics department at Ecole Polytechnique. At the initiative of the AFG, the Chaire FDIR is made possible for 2016 thanks to the financial support of the following 10 members:

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Agenda for the meeting of the

Scientific Committee of the Chaire FDIR

March 1st, 2017

1. Approbation of the 2016 annual report

2. Research achievements and projects

3. Miscellaneous

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Ordre du jour de la réunion

Du Comité Scientifique de la Chaire FDIR

1er mars 2017

1. Approbation du rapport annuel 2016

2. Réalisations et programme de recherche

3. Divers

Research team

Patricia Crifo, Ecole Polytechnique & U. Paris West (Chair co-director)
Sébastien Pouget, IDEI & Toulouse School of Economics (Chair co-director)
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Simone Sepe, IDEI & Toulouse School of Economics
Bernard Sinclair Desgagné, HEC Montréal & Ecole Polytechnique
Jean Tirole, IDEI & Toulouse School of Economics
Nicolas Treich, IDEI & Toulouse School of Economics

Doctoral and post-doctoral students

Thomas André, Schneider Electric & Ecole Polytechnique
Liviu Andronic, IDEI & Toulouse School of Economics
Aurélien Bigo, Ecole Polytechnique
Elena Escrig Olmedo, Universite Jaume I & Ecole Polytechnique
Madalena Ferrana, IDEI & Toulouse School of Economics
Aymeric Guidoux, Ecole Polytechnique
Yann Kervinio, IDEI & Toulouse School of Economics
Yves Le Yaouanq, IDEI & Toulouse School of Economics
Rim Oueghlissi, U. Evry & Ecole Polytechnique
Maximime Wavasseur, IDEI & Toujlouse School of Economics
Yuting Yang, IDEI & Toulouse School of Economics

Main research achievements

The research chair on Sustainable Finance and Responsible Investment («Chaire Finance Durable et Investissement Responsable», or Chaire FDIR) was launched in 2007, at the initiative of the French Asset Management Association AFG, by Christian Gollier from Toulouse School of Economics-IDEI and Jean-Pierre Ponssard from Ecole Polytechnique. The inaugural lecture was given by Jean Tirole, the 2014 recipient of the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel and a prolific contributor to the Chaire since its inception.

Now co-directed by Sébastien Pouget from Toulouse School of Economics-IDEI and Patricia Crifo from Ecole Polytechnique, Chaire FDIR has been running for ten years with about twenty internationally renowned scholars and has produced numerous scientific contributions to our understanding of responsible finance. The table below summarizes the main figures about Chaire FDIR, and more detailed information about its achievements is provided thereafter.

The Chaire FDIR in a few numbers	
The Chaire	-> Started in **2007** -> **20+** researchers -> **2** academic institutions: Toulouse School of Economics-IDEI and Ecole Polytechnique -> **10+** partners: ABN Amro Investment Solutions, Association Française de la Gestion Financière (AFG), Allianz Global Investors France, Amundi AM, Caisse des dépôts, Candriam France, Edmond de Rothschild AM, Fonds de Réserve pour les Retraites, Groupama AM, HSBC Global AM (France), La Banque Postale AM
Research	-> **4** fields of practical implications (more information offered is below): • Long-term risk valuation • Design and marketing of SRI funds • Governance, CSR and financial performance • Engagement and dialogue -> **25+** academic workshops with partners -> **10+** bilateral scientific meetings with partners -> **100+** scientific studies published -> **100+** presentations in scientific conferences -> **3** books on responsible finance -> **7** scientific conferences organized
Teaching	-> **15+** PhD students -> **10+** courses every year on responsible finance topics (Master Level)
Visibility	-> **18+** articles in popular press (Le Monde, Les Echos, La Tribune, Libération, Financial Times, L'opinion) -> **5** Best PhD Thesis awards from FIR-PRI -> **1** Nobel prize in Economic Science for Jean Tirole -> **1** Peace Nobel prize for Christian Gollier as a member of the IPCC -> **2** Best Young Economist nominations for Patricia Crifo and Edouard Challe -> **1** nomination as Chevalier de l'Ordre National du Mérite for Patricia Crifo -> **1** nomination as Chevalier de l'Ordre des Palmes Académiques for S. Pouget -> **1** Best Paper award for Sébastien Pouget from EIF -> **3** Cahiers de l'Institut Louis Bachelier dedicated to the Chaire FDIR

The main objectives of the Chaire FDIR are to:

- Contribute to objectivizing the arguments to show that the development of sustainable finance and responsible investment is – in today's world – not only necessary but also possible;
- Develop research methodologies allowing to better identify and integrate non-financial criteria into the analysis of value creation;
- Form a world-class scientific team on SRI.

To achieve these objectives, the Chaire FDIR carries out research around three main topics:

- Long-term ESG performance and risk evaluation,
- Corporate Governance,
- Shareholder engagement.

For the period 2016-2018, the general assembly meeting of the Association FDIR, the researchers of the Chaire FDIR, in conjunction with the sponsors, have defined five high-priority research projects that pertain the three main topics of the Chaire FDIR. The achievements on these five high-priority projects for the year 2016 are detailed below.

A) The five high priority research projects' achievements

The following section presents the main results and state of development of the five high priority projects defined for the period 2016-2018. Some projects are at an earlier stage of completion than others:

- Project 1 ("how governance affects firm value") is well advanced: working papers are available, some are submitted, and others are published. The main insights have been presented at several conferences and workshops with sponsors.
- Project 2 ("Institutional Investors as Active Owner") is still in the data collection and preliminary analyses phase: there is no working paper available yet, and the project has not been presented so far.
- Project 3 ("ESG factors and the performance of small and mid cap companies") is maturing. The first empirical analyses have been carried out, leading to interesting first results. A working paper is not available yet, but the first results have already been presented at various conferences.
- Project 4 ("The measurement of ESG performance and risk: qualitative ratings or quantitative metrics?") is at an advanced stage: working papers are available, some have been published, and several results have been presented at workshops. Further empirical analyses are still to be carried out in the future.
- Project 5 ("Sovereign credit ratings and interest rates") is maturing: working papers are available, some results have already been presented, but additional studies are still to be carried out.

Each project's presentation mentions what future research will be carried out, and includes a brief summary of the project's state of achievement. A Main Research Projects' Scorecard summarizes the information page 25.

1. *How governance affects firm value – Coordinated by Simone Sepe (IDEI-TSE)*

Objective

Over the past 20 years, empirical studies have gained tremendous importance in corporate governance discussions. These studies have largely supported the view that governance arrangements protecting directors and managers from removal increase the room for moral hazard by insulating insiders from beneficial disciplinary forces, reducing shareholder and firm value. On this view, "good" (i.e., value-increasing) corporate governance is largely understood today as being about stronger shareholder rights. Instead, managerial protection from shareholder removal, commonly referred to as "entrenchment", epitomizes "bad" (i.e., value-decreasing) corporate governance. The objective of the project is to gather new empirical evidence on what matters in corporate governance. In particular the project aims at understanding whether corporate governance measures traditionally identified as protective, therefore inducing managers and directors entrenchment, have a detrimental effect on firm value.

Methodology

For this project, a unique dataset that covers thirty years of corporate governance in the US, from 1978 to 2008, has been gathered. These data enable to distinguish between two types of corporate governance arrangements, which were previously uniquely identified as protective arrangements, and therefore considered as bad governance mechanisms.

Precisely, our new data separates those protective arrangements that require the agreement of shareholders (i.e., "bilateral protection arrangements") from the protective arrangements that *do not* require shareholder approval (i.e., "unilateral protection arrangements"). The first category covers staggered boards and supermajority requirements. The second category covers for instance poison pills and golden parachutes. The project investigates whether bilateral or unilateral arrangements have an impact on firm value.

The logic underlying these tests is that unilateral protection arrangements are indicative of bad governance because their "dictatorial" nature makes it more likely that moral hazard motivates their adoption, to the detriment of shareholders. Bilateral protection arrangements instead can be consistent with best governance practices because it may be in the shareholders' interest to limit their own rights, if doing so involves a beneficial bilateral commitment by boards and shareholders to corporate stability and longer-term investment strategies.

Results

We first investigate the long-term association of firm value with changes in board structure (that is, the decision to adopt or remove a staggered board). **We find no evidence that staggered boards have a strong or persistently negative association with firm value.** Rather, **in more innovative firms, or in firms in which stakeholder investments are more**

relevant (e.g., with a large customer or in a strategic alliance), adopting (removing) a staggered board is associated with an increase (decrease) in long-term firm value. For example, the adoption (removal) of a staggered board is associated with an increase (decrease) in firm value, as proxied by Tobin's Q, of 5.3% for firms with a large customer, and has an insignificant association for firms without a large customer. Further, our results are driven by the second half of our time period (i.e., the 1996-2015 sub-period) and generally insignificant in the first half (i.e., the 1978-1995 sub-period). Overall, these results suggest that staggered boards have heterogeneous effects across firms and time, providing no support for the entrenchment view but also making it difficult to draw any one-size-fits-all inference about the relation between staggered boards and firm value.

A primary challenge in interpreting the empirical relation between changes in board structure and long-term firm value is that staggered boards, like other corporate arrangements, are not randomly assigned. We try to mitigate these endogeneity concerns in different ways. For instance, we conduct a long-term event study exploiting exogenous variation in board structure due to changes in Massachusetts' corporate law. In 1990, Massachusetts made staggered boards "quasi-mandatory" by requiring firms incorporated in the state to adopt a staggered board by default and making it difficult to opt out of this requirement. We compare the value of Massachusetts firms in the few years before and after this legal change in a matched sample of firms, where the control firms are incorporated outside of Massachusetts but have a similar size, are in the same industry, and have the same board structure as the Massachusetts firms. After the legal change, the value of the Massachusetts firms increased more than the value of their control firms, but with no difference between Massachusetts firms with and without a staggered board prior to the law change. **Therefore, while these results do not provide direct evidence that mandating the adoption of a staggered board increases firm value, they are also clearly inconsistent with the hypothesis that having a staggered board in place lowers firm value.**

Our results suggest that the role of staggered boards differs across firms. We find that the adoption (removal) of a staggered board has a positive (negative) association with firm value among firms with stronger stakeholder relationships, such as firms with large customers, productive employees and in strategic alliances. **We similarly find that the adoption (removal) of staggered boards more positively (negatively) impacts firm value among firms whose projects require longer-term investments and are likely harder to value by outside investors, such as firms with more investments in innovation and intangibles.**

We next investigate whether bilateral protective arrangements have a different impact on firm value than unilateral protective arrangements. To do so, we divide the standard Corporate Governance "Entrenchment" Index (the so-called E-Index) into two separate sub-indices: a commitment index (or, more briefly, C-Index), that only includes the E-Index's three bilateral provisions, and an incumbent index (or, I-Index), that only includes the E-Index's three unilateral provisions. We document that increased scores on the C-Index (i.e., more commitment) are associated with increases in firm value. **That is, adopting governance measures aiming at protecting directors *with the approval of shareholders* increases firm's value. Conversely, increased scores on the I-Index (i.e., more incumbent-driven entrenchment) are associated with decreases in firm value.** As a further empirical test, we examine whether the use of bilateral protection arrangements is more valuable to certain categories of firms for which the shareholders' limited commitment problem appears to be more severe. We find that the positive association between bilateral arrangements and firm value is stronger for: (1) firms with more long-term innovation, (2) firms for which stronger firm-specific investments by non-financial stakeholders, such as employees and customers, are likely to be more important, and (3) firms with more potential for excessive future risk taking to the detriment of financial stakeholders such as creditors.

Implications for practice
The results found in this project bear major implications for the debate on both the means and ends of corporate governance. **We show that pursuing firm value maximization requires enhanced board protection in the short-term without eliminating exposure to shareholder discipline in the longer-term.** Increased protection from removal is necessary at the beginning of a director's tenure, when directors are more likely to have competitive private information that the market lacks on the actions that contribute to longer-term value. Protection then efficiently enables directors to take actions that can lead to low short term earnings, without the fear of dismissal. Conversely, over time, as a director's tenure matures and market prices are more likely to catch up with directors' informational advantage, shareholders become better positioned to discipline directorial and managerial actions. Empowering boards to resist short-term market pressure with the prior agreement of shareholders achieves the above mechanism. Such a model adds value that a direct « shareholder democracy » cannot provide by ensuring that shareholder discipline operates in the long-term, rather than the short-term. These results directly speak to the debate on what defines good governance practices.

Project's state of achievement: so far, the project has given rise to two working papers, one of which has been published in the Northwestern University Law Review (2016).

2. *Institutional Investors as Active Owner – Coordinated by Sébastien Pouget (IDEI-TSE)*

The objective of this project is to empirically study why and how institutional investors, asset owners and managers, vote during shareholder meetings. Separation between ownership and control is one of the fundamental characteristics of modern companies (Berle and Means, 1932). This separation opens the room for potential conflicts of interests between investors and corporate executives (Jensen and Meckling, 1976): managers may not always favor the strategies that are best for investors.

To mitigate the negative effects of these conflicts, investors can induce executives to follow their guidance by engaging companies, i.e., discussing with executive managers and board members, filing shareholder proposals and obviously voting during shareholder general meetings.

A priori, managers know best what is the right course of business for firms. But companies may generate externalities on society, and investors may care more about these externalities than managers. Two basic arguments then warrant investors to be active in engagement. The first argument rests on the universal owner logic (Mattison, Trevitt and Van Ast, 2011). Large institutional investors own a significant share in virtually all listed companies and have a long horizon. The situation is very different for corporate executives who, for the sake of incentives, in general own concentrated stakes in their companies. These different holding profiles generate conflicts of interests: executives are not going to internalize the effects that their companies have on the payoffs and value of other companies. For example, they may not take into account the negative economic impact that the polluting activities of their firm have on other companies. On the other hand, institutional investors that own very diversified portfolios would like the firm to take into account these negative effects to avoid deteriorating the overall value of their portfolios.

A second argument that calls for institutional investors to be active in engagement is related to the delegated philanthropy logic (Benabou and Tirole, 2010). Institutional investors such as pension funds, sovereign funds and mutual funds invest on behalf of clients who may have preferences regarding externalities that differ from the ones of executive managers. As a result, investors might want to promote their values and preferences towards executives so that they choose the appropriate course of action. One can for example think that the level of global risk induced by a firm (related to climate change, nuclear activities…) might not be valued in the same manner by managers and by the investors who represent clients. Investors may thus want to communicate corporate executives what is their preferred level of precaution. This can only be achieved via engagement.

This project plans to collect data on voting policies of various institutional investors in order to study how their engagement/voting policy is implemented in practice. Recent empirical evidence suggests that universal owners do have an impact on the firms in their portfolios (Dimson, Karakas, and Li, 2015, Azar, Schmalz, and Tecu, 2015, Kempf, Manconi, and Spalt, 2014, and He and Huang, 2014). However, the precise mechanism through which they exercise their influence has not yet been empirically identified. Our idea is thus to test whether institutional investors are more actively engaging firm in areas that are subject to externalities, and to test whether various investors have different preferences over these issues.

Project's state of achievement: The project is still in the data collection and preliminary analysis phase. Empirical analyses will be performed during the year 2017.

3. *ESG factors and the performance of small and mid cap companies – Coordinated by Sébastien Pouget (IDEI-TSE)*

Objective

This project proposes an empirical investigation of small and mid cap companies' strategic behavior regarding Environmental, Social and Governance (ESG) factors, and aims at testing how it affects their risk-return profile on the stock market.

There are several reasons to believe that small and mid cap companies are very different from publicly traded large caps in terms of business strategies, in particular regarding ESG factors. First, small and mid cap companies are more likely than larger firms to be owned and/or operated by their founder or by the founder's family members (Adams, Almeida, and Ferreira, 2005, and Fahlenbrach, 2009). This provides them with a long-term view and in turn a commitment power that can have valuable business consequences. For example, commitment power of executives and shareholders might enable small and mid cap companies to implement innovative human resources strategies, i.e. providing insurance to their employees in case of downturns or failures in order to increase their level of implication or creativity (Sraer and Thesmar, 2007). Also, a long-term horizon might enable the firm to develop innovative environmental strategies that necessitate efforts in the short run but are beneficial in the long run (Benabou and Tirole, 2010). Second, even small and mid cap companies that are not owned and managed by founders or their families could enjoy a high level of economic performance: the relative illiquidity of small and mid cap equity markets provides stronger incentives for shareholders to monitor and engage with management (Maug, 1998).

Methodology

This project focuses on French small and mid caps (SMC). A major constraint is to obtain data on the extra financial performance of these firms. We obtained such data from Ethifinance, that covers 241 SMC over the period 2009-2013. 74% of the firms in our sample belong to the CAC Mid & Small Index. We complemented these data with the following sources: Accounting data come from Infinancials Database; FactSet includes detailed data on institutional investors' shareholdings; Financial and market data are obtained from Datastream; Finally, directors' identity and founder's family shareownership have been hand-collected.

With these data, we performed a series of multiple regressions to investigate how the return on asset, the return on equity, the market cap (scaled by asset size) as well as the level of social responsibility are correlated with various variables: whether the founder or his heirs own a large fraction of the firm's equity, whether the CEO is the founder or one of his heirs, the level of employee ownership, the level of institutional shareownership.

Following Sraer and Thesmar (2007), we define a family firm as one whose founding family or any other family owns more than 20 % of its equity. Based on this criterion, our dataset includes 163 family firms, and 78 nonfamily firms. The descriptive statistics show that 52 % of family firms are still run by their founder, and that an additional 25 % are run by a founder's heir. Also, the return on equity of family firms appears larger. Last, family firms are smaller and older than nonfamily SMC.

Results

A first analysis relying on two-steps regressions with instrumental variables provides the following (preliminary) results.

First, family firms still owned by their founder or one of his heirs exhibit a larger economic performance, as measured by the return on asset, or by the return on equity. Also, their daily stock return volatility is smaller.

Next, the larger economic performance of family firms is in general integrated in market prices. However, the market cap (measured by Tobin's q) of family firms run by their founder is smaller than that of nonfamily firms, while their financial performance is larger.

In line with our hypothesis that employees' long-term commitment has a positive impact on firm value, we find that firms with a larger fraction of employees' stockownership have a better economic performance, as well as a lower volatility of returns. This superior performance seems however not to be reflected in their market cap.

Last, family-controlled firms, whether run by their founder or by an external CEO exhibit a greater extra financial performance. A similar result is found for firms with a greater proportion of employees' stockownership and for firms with more employees seating at the board.

Overall, these preliminary results suggest that firms with a long-term orientation, either thanks to family stockownership, or to employees' stockownership, exhibit a larger financial as well as extra financial performance.

Project's state of achievement : The project is in the empirical analysis phase, and will be investigated further during the year 2017.

4. *The measurement of ESG performance and risk: qualitative ratings or quantitative metrics? – Coordinated by Patricia Crifo (Ecole Polytechnique)*

Objective

In the CSR-financial performance literature, many scholars still consider that much research needs to be conducted before this relationship can be fully understood (see e.g. Delmas et al., 2011; Griffin and Mahon, 1997; Rowley and Berman, 2000; Surroca et al., 2010). From this perspective, this project proposes to examine how different combinations of Corporate Social Responsibility (CSR) dimensions affect corporate economic performance with data on CSR performance, that is based on quantitative metrics of CSR-related management practices rather than qualitative extra-financial evaluation through scores or ratings. As emphasized by Chatterji et al. (2009), extra-financial ratings are rarely evaluated and have been criticized for their own lack of transparency.

In this project, we propose to analyze how different combinations of CSR dimensions affect firm performance by relying on quantitative measures of CSR-related management practices implemented by the firms, rather than evaluations (scores or ratings) based on past and/or expected future CSR behaviors.

Methodology

To measure CSR-related practices, this project uses variables extracted from two French statistical surveys consisting in large scale databases including more than 10,000 small and mid caps (firms with more than 10 and 500 employees) in 2006 and 2011.

The first database relies on the 2006 Organizational Changes and Computerization survey administered by the National Institute for Statistics and Economic Studies (INSEE), the Ministry of Labor, and the Center for Labor Studies. The sample extracted from this survey includes 10,293 firms.

The second database relies on the 2011 Sustainable Development survey (Enquête sur le Développement Durable et la responsabilité sociétale des entreprises), administered by the National Institute for Statistics and Economic Studies and the Ministry of Ecology, Sustainable Development and Energy. This survey gives very detailed information on CSR implementation and intensity, as well as firm motivation for CSR commitment, for a representative sample of business units with at least 10 employees, including all the business groups with more than 500 employees. The sample extracted from this survey includes 8,775 firms.

Results

Three different projects have been conducted in this research program.
The first project investigates the quality-quantity trade-off in the design of responsible ESG strategies, and its relationship with profit per employee, an indicator of labor productivity that captures firm's ability to control costs and, at the same time, retain an adequate level of provided services. The results show that **environmental, human resources, and customers & suppliers practices affect positively and significantly profitability** when they are implemented both in isolation and as part of a coherent management devices bundle. Yet, the customer & supplier dimension exerts a weaker effect compared to the other two dimensions. Moreover, the study shows that in order to improve business performance via CSR investments firms need to implement a particular "mix" of CSR practices. In other words, **some ESG combinations are better for profitability than others**. In the French case, combining responsible green and customer & supplier strategies improve firm performance more than combining responsible social and customer & supplier strategies.

The second project analyzes the links between CSR motivations (strategic/altruistic/defensive) and CSR commitment intensity (awareness) and practices. The objective is to determine which type of CSR metrics best correspond to declared versus implemented CSR practices and risks. The study shows first that CSR disclosure is not associated with stronger greenwashing in the sense that CSR practices are associated with CSR awareness. Second, **the firm's motivation for CSR investment affects the type of practices implemented.** While defensive CSR is associated with low CSR awareness on all ESG issues; pro-social CSR is associated with environmental management through soft practices; and strategic CSR is associated with the three ESG pillars through hard practices (labels and monitoring tools).

The third project identifies the factors that can favour the adoption of responsible practices and their impact on firm competitiveness. Two main sets of results are obtained. First, regardless of the CSR dimension, size and activity sector are key criteria. If size matters for CSR practices (especially because of economies of scale affecting introduction costs), CSR practices are also more widespread in some sectors like the agri-food industry, intermediate goods, and energy. The study also shows that CSR is more prevalent in companies that focus their strategy on quality and differentiation (novelty and personalisation) of products and services. This suggest that if a business can identify consumers who wish to purchase ethical goods, and if it can protect the resulting niche from potential imitators, its "CSR strategy" is based on profitable differentiation. Belonging to a group and a business network, company reorganisations (outsourcing part of the economic activity or financial restructuring), or even opening up to international markets (including the European Union) are also factors that, on average, encourage the embedding of responsible approaches.
A second set of results shows that whatever the measure of economic performance retained (profit per head, gross operating surplus, or added value per head) and the CSR dimension (environmental, ethical, human resources, client relationships, and supplier relationships), an **average performance gap of 13% is observed between businesses that put CSR practices in place and those that do not**. Those average gaps in performance vary according to the dimensions observed: they range from 5% for client relationships to 20% for the "human resources" dimension. Businesses that put CSR practices in place thus seem to reconcile responsible management (towards clients, suppliers, and employees), respect for the environment, and the requirement for competitiveness.

Project's state of achievement : So far, the project has given rise to three published studies. The first one has been published in the International Journal of Production Economics (2016), the second one has been published as chapter of a PhD defended in dec 2015, and the third one has been published as a research report for France Strategie (2016).[1]

Future research will pursue the examination of the various ESG indicators that are the most important to capture CSR behaviors, in particular by considering two elements. First, we will investigate which indicators are the best measured, are the most used or have the strongest impact. Second we will focus on the governance dimension and examine how ESG indicators relate to executive behaviors and compensations.

5. ***Sovereign credit ratings and interest rates – Coordinated by Patricia Crifo & Edouard Challe (Ecole Polytechnique)***

Objective

The use of a large number of variables (quantitative and qualitative) as determinants of sovereign credit ratings reflects somehow the ambiguity surrounding the criteria underlying sovereign ratings. The objective of this project is to help better understand variables used in the determination of sovereign credit ratings. Our analysis builds on the previous literature by exploring the use of environmental, social and governance (ESG) factors as explanatory variables. The main question raised (and hypothesis tested) is the following: how much of an impact do ESG quantitative indicators have on sovereign credit ratings and interest rates?
Related to this, our principal challenge is how to quantify government ESG performance. The ESG performance of governments is difficult to assess for at least two reasons. According to many observers, it is often hard to know whether the government should be evaluated as a geographical entity (indicators based on its ESG factors, i.e. forest resources, access to water or CO_2 emissions), as a demographic entity (indicators based on results that depend on the public authority's resources and therefore the nation's wealth and development, e.g. illiteracy rate, life expectancy) or as a political institution (this raises the question of how policy is judged based on level of development). In addition, there is no clear definition of the methodology and the value applied to assess the ESG performance of governments. The reality is that rating agencies and investment managers use a wide array of data from different official and recognized sources.

Methodology

To examine the relationship between ESG performance and sovereign borrowing costs, we have built a data set including observations of 23 OECD countries from 2007 to 2012 from four sources. The first one is the Vigeo Sustainability Country Rating database, providing information on ESG qualitative performance. The second source is the Thomson-Reuters

[1] France Stratégie, also called The Commissariat Général for Strategy and Foresight, is an institution directly dependent on the Prime minister, in charge of evaluating public policies; anticipating future changes in French society regarding economy, sustainable development to prepare the conditions for political decision; fostering a dialogue between the social partners, civil society, business, the community of experts and academia; proposing policies and reforms and providing orientation to the government, highlighting possible trade-offs, and foreign experiences.

Datastream database, providing the yield on sovereign bonds as well as S&P ratings. The third source of variables is the World Bank database providing information on macroeconomic variables (GDP growth rate, inflation rate, gross debt to GDP ratio, country fiscal balance to imports, reserves to imports ratio, and trade openness ratio defined by imports and exports to GDP), as well as ESG quantitative performance variables (Electricity generation, CO2 emissions, Forest rents per GDP, Protected areas as a percentage of national land area, Social expenditure per GDP, Female to male labor force participation rate, Health expenditure per GDP, R&D expenditure per GDP, Human Development Index, Regulatory quality, Rule of law, Government effectiveness, Political stability, Voice and accountability, and Corruption control). And the fourth source of variables is the ISO database giving the number of ISO 14001 certified firms in each of our 23 countries. In terms of econometrics strategy, we use an instrumental variables panel regression model.

Results

Our results show a negative correlation between the countries' socially responsible performance and the sovereign borrowing cost (defined by the government bonds spread). It seems therefore that countries displaying higher ESG indicators are rewarded by lower sovereign borrowing costs. The results suggest that ESG ratings could play a role in assessing country risk and its location and distribution in the financial system. By facilitating investment decisions, ESG assessments can help investors in achieving a balance in the risk return profile and at the same time assist countries in accessing capital at a low cost (Kohut and Beeching, 2013; Drut, 2010; Connolly, 2007). Moreover, the effect of ESG ratings on sovereign borrowing cost is about however three times weaker (in absolute value) than the effect of financial ratings on sovereign borrowing cost. This suggests that investors may use extra-financial ratings as a supplement to financial ratings.

To go deeper into the analysis of country ESG performance and borrowing costs, a second project aims at explicitly identifying the quantitative criteria to be incorporated in ESG performance, not only the qualitative (ratings) ones. For this purpose we construct intermediate ESG indexes as well as a global ESG index and examine their impact on the price of sovereign risk. The analysis is also extended to the period from December 1996 to December 2010 across 35 advanced economies (AEs) and emerging market economies (EMEs). **Preliminary results show that countries with good ESG performance tend to have less default risk and lower bond spreads.** The economic impact is also stronger in the long-run; it is especially governance which appears to have an impact, in particular during the Global Financial Crisis period.

Another project related to the theme of sovereign credit ratings and interest rate is that pursued on the topic of country governance and debt. This line of work examines empirically and theoretically the links between the amount of external debt (both public or private) of a country and the quality of its governance, that is, its "institutions" (broadly defined, following Douglas North, as "the set of rules and constraints that shape economic behavior and incentives"). This question is empirically investigated in a specific context, namely that of the run up to, and then accession of, southern European countries into the EMU. The quality of governance is measured by means of the World Governance Indicators, which summarise in a handful of indexes ("Control of Curruption", "Rule of Law", "Political Stability"…) the various relevant dimensions of country governance (those indexes are constructed by aggregating the information contained in hundreds of time series on governance quality). The project establishes that country governance has significantly declined in southern Europe (Spain, Portugal, Italy and Greece) over the decade going from the mid-1990s to the mid-2000s. This phenomenon is specific to those countries, occurs nowhere else among developed economies, and happens well before the Great Recession of 2008-2009. **It then shows that, both within Europe and within a broad set of countries worldwide, the decline in institutional quality is systematically preceeded by protracted capital inflows** (in southern Europe, these inflows followed the run up to the euro, which allowed countries to borrow much more easily and at much cheaper rates). The project then develops a theoretical model aimed to explain this stylized fact. More specifically, **it shows that inflows of cheap capital naturally cause governance to deteriorate when two plausible market frictions interact: credit constraints and a "soft budget constraint" syndrome wherebe socially inefficient projects may nevertheless be refinanced du to the inability of the government to commit not to**. Low interest rates and easy external financing then lower the social cost of refinancing good projects and hence the need to maintain good institutions.

Project's state of achievement: So far, the project has given rise to three working papers and various presentations in conferences and seminars.

Future research will pursue the analysis of the quantitative ESG factors and their impact on sovereign bonds markets.

B) Other research projects' achievements

Researchers have carried out other projects related to the general topics of the Chaire. These projects have been presented at several workshops with sponsors and are detailed below.

1. The impact of ownership concentration on firm risk (Silvia Rossetto –IDEI-TSE)

Objective

The objective of this project is to understand how the ownership structure of firms affects their strategies and underlying risk characteristics. Firms across countries and sectors display a range of complex ownership structures and often cannot be easily categorized as either widely held or controlled by one large investor. For example, ownership structures with more than one large investor are the most common type of ownership structure. In the United States, 74% of the publicly listed firms have more than one blockholder, with a blockholder defined as an investor with a stake greater than 5%. Only 18% have only one blockholder and 8% are widely held. European firms have similar features. More than 34% have at least two investors and 12% have more than two investors with a stake greater than 10% (Laeven and Levine, 2008).

The starting point for many studies on ownership structure is the idea that a large blockholder helps to overcome the free rider problem in monitoring a firm manager (Shleifer and Vishny, 1986). Since a larger blockholder tends to be more exposed to firm risk, one would expect such firms to take less risk, the larger is the block (Admati, Pfleiderer, and Zechner, 1994). The presence of a large shareholder triggers a conflict of interest among shareholders regarding risk choices: the large blockholder prefers low risk/return projects, while small shareholders prefer high risk/return projects. Mid-sized blockholders may have the incentive to emerge and mitigate this conflict of interest (see Dhillon and Rossetto, 2015). Hence, when mid-sized blockholders emerge, the largest shareholder may no longer determine the risk choices, but rather the voting power of all shareholders has an impact. In such a setting, this often means that the higher the number of blockholders, the riskier the investments will be.

Building on these ideas, we carry out an empirical study to test whether mid-sized blockholders play a role in determining firm policies, or whether the power of the largest blockholder is the only driver of firm risk choices.

Methodology

To test our hypothesis, we use a publicly available database on the ownership structure of 1913 US listed firms over 6 years. We measure firm risk by (daily) share price volatility computed annually. This is an obvious choice as this variable affects shareholders' portfolio volatility when undiversified. In addition, we also collected information on share prices and firm characteristics.

We carry out both a cross-sectional analysis and a fixed-effect panel regression. To address concerns related to simultaneous determination of risk and ownership structure, we use an instrumental variable that decoupled the exogenous variation in ownership structure. In the theoretical model of Dhillon and Rossetto (2015), sector characteristics determine ownership structure, which in turn determines firm-specific characteristics, such as volatility. Hence, we choose the sector average of the proxy of ownership structure as our instrumental variable. To address the potential issue of omitted variables, we both carry out a panel data analysis and introduce selected control variables that might affect volatility but would not be affected by it.

Results

We first try to replicate the findings of the existing literature by looking at the relationship between the size of the largest blockholder's stake and firm risk. In line with these studies, we find a (weak) negative relationship between the size of the largest blockholder's stake and volatility. We then split the sample into one subsample of firms with only one blockholder and a second subsample with more than one blockholder. **We show that the negative relationship between the size of the largest blockholder's stake and firm risk disappears when there are several blockholders.** This confirms the notion that ownership structure matters for risk taking, but that the relationship is more complex than previously thought.

We follow up on these findings to see which aspects of ownership structure affect share price volatility. We compute the number of blockholders, and test whether it has an impact on firm risk. The data confirm the hypothesis that the number of blockholders positively affects share price volatility. Hence, share price volatility is a concern for shareholders (not only for firms with one blockholder) and mid-sized blockholders do play a role in determining a firm risk. This result has economic relevance. **When a firm has one blockholder, the arrival of another blockholder increases volatility by between 5% and 6%.**

Overall, we conclude that ownership structure, in all its complexity, has an effect on firm risk. This is an indication that studies of the relationships between ownership structure and firm risk should not be limited to the distinction between firms with and without blockholders, or to the relationship between the fraction of shares held by the largest blockholder. Mid-sized blockholders are important and play an active role in firm policy. This new approach offers the possibility of re-examining and reinterpreting many aspects of firm policies related to corporate governance.

2. Pricing long-term risk (Marianne Andries –IDEI-TSE)

Objective

The finance literature has been successful in explaining many features of observed equilibrium asset prices and their dynamics (Cochrane, 2016). However, elusive puzzles in the interactions between the timing and the pricing of uncertainty remain. For example, in the long run risk framework, which is central to the asset pricing literature, calibrating the model to match asset pricing moments implies an unrealistically strong preference for early versus late resolutions of uncertainty. Also, recent empirical evidence shows risk prices are higher for short-term risks than for long-term risks (see van Binsbergen and Koijen, 2016). These findings pose a fundamental challenge because they are inconsistent with traditional asset pricing models in which the term structure of risk premia is generally upward-sloping. Yet, understanding the pricing of risk at different horizons is important for various fields in economics and has immediate policy implications, from climate change to public policy (see, e.g. Gollier, 2013; Giglio et al., 2015).

The objective of this project is to propose a model for the pricing of assets that addresses both sets of challenges.

Methodology

Inspired by ample experimental evidence, we construct preferences in which subjects are more risk averse to immediate than to delayed risks, a novel form of time inconsistency. We therefore consider a model that relaxes the assumption, universal to the economics literature, that risk aversion is constant across maturities. That is, we consider an agent with an *horizon-dependent risk aversion*. We investigate whether the standard toolbox of asset pricing can be generalized to accommodate risk preferences that differ across temporal horizons, and if such a generalization can explain the puzzling patterns in the timing and pricing of risk.

To derive equilibrium asset prices, we assume that our agents are perfectly rational and aware of their horizon-dependent risk aversion preferences. We consider a representative agent who trades and clears the market every period, and, as such, cannot pre-commit to any specific strategy: unable to commit to future behavior but aware of her preferences and perfectly rational, the agent optimizes in the current period, fully anticipating reoptimization in future periods.

Results

At first glance, obtaining a decreasing term-structure of risk premia from a model with a decreasing term-structure of risk aversion seems very intuitive or even tautological. However, the agent's choices, and thus equilibrium prices, are determined dynamically from one period to the next. At time t, the agent chooses how to allocate her wealth between t and t + 1, a time frame over which only her immediate risk aversion matters: in this context, why and how horizon-dependent risk aversion should affect pricing is a complex question. Indeed we find its impact to be subtle: we formally derive the stochastic discount factor of our model, and shows it nests the standard Epstein and Zin (1989) case, with a new multiplicative term arising from the preferences' dynamic inconsistency. The new term reflects the wedge between the continuation value used for optimization at any period t and the actual valuation at t + 1.

We investigate the implications of our model both on the level and on the slope of the term structure of risk premia in a Lucas-tree endowment economy. Horizon-dependent risk aversion does not concern inter-temporal decisions. As such, **we formally show that both the risk-free rate and the pricing of shocks that impact consumption levels are unchanged from the standard model.** If risk is constant in the economy, equilibrium asset prices are unaffected by our time inconsistent model of preferences. By contrast, the pricing of shocks that impact consumption risk, or volatility, are modified by horizon-dependent risk aversion.
Our model can simultaneously match the average level of risk prices and generate a downward-sloping term structure of equity premia. That is, our model can rationalize both the "early versus late resolution of uncertainty" puzzle and the observed term-structure of risk premia, as long as risk varies through time. Such success at solving these two recently emerged puzzles on the timing and pricing of uncertainty is achieved without compromising the model's ability to match the usual asset pricing moments, and in a no more restrictive framework than the standard Epstein and Zin (1989).

3. Wages and Corporate Social Responsibility: Entrenchment or Ethics? (Patricia Crifo - Ecole Polytechnique, with Marc Arthur Diaye –U Evry val d'Essonne & Sanja Pekovic – U Paris Dauphine)

Objective

Despite the considerable attention given to the CSR-performance relationship in the literature, little is known on one important driver of CSR, namely motivation-enhancing human resources practices in the form of wages and rewards. As a signal for corporate culture, CSR can attract good employees, or at least highly qualified. Green firms can also recruit motivated employees with teamwork values and thereby reduce costly employee turnover or secure firm survival and long-term performance. In addition, CSR is positively related to firm identification, trust in the employer, organizational commitment, intention to stay, job satisfaction, working conditions and organizational citizenship behaviors (Brammer et al., 2007; Kim et al., 2010; Nyborg and Zhang, 2013, Brekke and Nyborg, 2008).
Although these studies are informative, they only indicate a part of the story as they ignore the direct impact on employees' wages, which can have two conflicting outcomes. If

proactive human resource policy tend to increase firm performance through productivity (see Delmas and Pekovic, 2013; Edmans, 2011), motivated employees might also be likely to accept lower wages than the fair market value because they are compensated through the knowledge that their work satisfies their personal values (Frank, 1996; Gond et al., 2010). As indicated by Burbano (2016), employees are motivated by “purpose” in the workplace and are willing to tradeoff monetary benefits for non-monetary benefits. On the contrary, it could be that investment in CSR improves employees’ skills and human capital (Lanfranchi and Pekovic, 2014) suggesting that they will receive higher wages (Bailey et al., 2000). Additionally, since CSR firms are considered as more profitable, it could be that part of their gain goes to employees.
Overall, proactive CSR can enhance employee productivity through various paths. Yet, empirical research on the topic is in its infancy, and many scholars consider that much research needs to be conducted before this relationship between CSR, motivation and wages can be fully understood. In this paper we attempt to evaluate the evidence relating the “tradeoff hypothesis” indicating that employees in socially responsible firms are ready to accept lower wages, or the argument that working in CSR firm is associated with higher level of employee human capital or profit gain sharing implying a positive effect on wages.

Methodology
To investigate the effect of CSR on wages, we use three French databases. A matched employer-employee database called the Annual Survey of the Cost of Labor and the Wage Structure (ECMOSS, 2006), which provides information about employees’ wages. A database called the Organizational Change and Computerization survey (COI, 2006) which provides information about firms’ CSR practices (not ratings) in particular on the social (towards employees and customers and suppliers) and environmental dimensions. And the third database called the Annual Business Survey (EAE, 2003) provides information about firms’ income and export. The final sample resulting from merging the three surveys includes **15,365 workers**.
In terms of econometrics strategy, we use a **simultaneous equations model** (Zellner and Theil, 1962), in which the factors that determine CSR are estimated simultaneously with those defining the wage policy.

Results
The results on the whole sample indicate that **firms adopting CSR practices tend to pay lower wage premia** (bonuses and employee participation schemes), suggesting that employee motivation in responsible companies would rely on non-monetary incentives rather than on purely monetary incentives. This result finds echoes in the experimental evidence reported by Koppel and Regner (2014) whereby on average, workers reciprocate investments in CSR with increased effort. Here, we document that workers might accept to reciprocate investments in CSR with lower wage premium. Similarly, Nyborg and Zhang (2013) found that more responsible firms tend to offer lower wages. Interestingly, we also show that **for managers, the responsible firm’s wage premium is significant and positive**.
Our results suggest more generally to move beyond a simple examination of the relationship between CSR and wage, to better understand the contextual factors behing such a relationship in particular regarding the nature of the monetary incentives offered and the employee’s occupation and skills.

Future research will pursue the analysis of CSR based compensation schemes, in particular for executive compensation.

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Main research projects' scorecard

Themes	Projects	Advancement
How governance affects firm value	Commitment and entrenchment in corporate governance, *Martijn Cremers, Saura Masconale, and Simone Sepe* Staggered Boards And Long-Term Firm Value, Revisited, *Martijn Cremers, Lubomir Litov, Simone Sepe*	2 working papers, 2 workshops and meetings with sponsors, presentations at international conferences, 1 publication
Institutional Investors as Active Owner	Blackrock vs the Norway Fund in shareholding meetings: On the determinants of voting policies, *Marie Brière, Sébastien Pouget and Loredana Ureche-Rangau*	Data collection and preliminary analysis
ESG factors and the performance of small and mid cap companies	Governance and performance of small- and mid-cap companies: *Jaballah and Pouget*	2 workshops and meetings with sponsors, presentations at conferences
The measurement of ESG performance and risk: qualitative ratings or quantitative metrics?	CSR related management practices and Firm Performance: An Empirical Analysis of the Quantity-Quality Trade-off on French Data: *Crifo, Diaye & Pekovic* RSE et compétitivité. Evaluation et approche stratégique. *Benhamou, Diaye & Crifo* Governance and form performance: the sustainability equation: *Roudaut*	2 working papers, 1 workshop with sponsors, 1 public workshop , presentations at international conferences, 1 publication, 2 public reports, 1 PhD
Sovereign credit ratings and interest rates	ESG performance and sovereign bond spreads: an empirical analysis of OECD countries: *Capelle-Blancard, Crifo, Diaye, Oueghlissi & Scholtens et Crifo, Diaye & Oueghlissi* Country governance and debt: the case of southern Europe 1996-2011: *Edouard Challe, Jose I. Lopez and E. Mengus*	3 working papers, 2 workshops and meetings with sponsors, presentations at international conferences

Publications and working papers

Researchers of the Chaire FDIR have written some of these articles with researchers from other institutions located both in France and abroad.

- Benabou, Roland and Jean Tirole, Bonus Culture: Competitive Pay, Screening, and Multitasking, 2016, *Journal of Political Economy* 124, p305-370.
- Benhamou, Salima, Marc-Arthur Diaye and Patricia Crifo, 2016, RSE et compétitivité : Evaluation et approche stratégique, *Etude France Stratégie*, 150 pages.
- Bobtcheff, Catherine, Christian Gollier and Thomas Chaney, 2016, Analysis of systemic risk in the insurance industry, *Geneva Risk and Insurance Review* 41, 73-106.
- le Bris, David, William Goetzmann and Sébastien Pouget, 2016, Testing asset pricing theory on six hundred years of stocks returns: Prices and dividends for the Bazacle company from 1372 to 1946 », working paper.
- le Bris, David, William Goetzmann and Sébastien Pouget, 2016, The development of corporate governance in Toulouse, working paper.
- Capelle-Blancard, Gunther, Patrica Crifo, Marc-Arthur Diaye, Rim Oueghlissi and Bert Scholtens, 2016, Environmental, Social and Governance (ESG) performance and sovereign bond spreads: an empirical analysis of OECD countries, Working paper.
- Cavaco, Sandra, Edouard Challe, Patricia Crifo, Antoine Réberioux and Gwenael Roudaut, 2016, Board independence and operating performance: Analysis on (French) company and individual data, *Applied Economics*, In press.
- Chabé-Ferret, Sylvain, Laura Dupont-Courtade and Nicolas Treich, 2016, Evaluation des politiques publiques : Expérimentation randomisée et méthodes quasi-expérimentales, working paper.
- Challe, Edouard, *Fluctuations et Politiques Macroéconomiques*, Economica, 2016.
- Challe, Edouard, Jose I. Lopez and Eric Mengus, 2016, Southern Europe's institutional decline, Working Paper.
- Challe, Edouard, Julien Matheron, Xavier Ragot and Juan Rubio-Ramirez, 2016, Precautionary saving and aggregate demand, *Quantitative Economics*, forthcoming.
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- Crifo, Patricia, Marc-Arthur Diaye and Sanja Pekovic, 2016, Wages and Corporate Social Responsibility: Entrenchment or Ethics? Working Paper.
- Crifo, Patricia, Elena Escrig-Olmedo and Nicolas Mottis, 2016, Investor relations and CSR, Working paper.
- Dietz, Simon, Christian Gollier, and Louise Kessler, 2016, The climate beta, mimeo, London School of Economics
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- Sepe, Simone, Board and Shareholder Power, Revisited, 2016, *Minnesota Law Review* forthcoming.
- Sepe, Simone, 2016, Staggered Boards: Practice, Theory and Evidence, in *Research Handbook On Mergers And Acquisition*, Steven Davidoff and Claire Hill, eds, Edward Elgar forthcoming.

Communication of the Chaire FDIR achievements and awards

The advances made by the researchers of the Chaire FDIR have been presented to a wide audience including academic researchers, finance practitioners, and the general public, both in France and abroad. The Chaire FDIR has been instrumental in allowing for the creation of the knowledge communicated in the various events described below.

1. Communication to finance practitioners

In 2016, the Chaire FDIR has organized various events during which researchers have presented the implications of their results for CSR and SRI. In particular, 4 workshops have been organized at the AFG for the sponsors, as well as 2 general audience conferences.

Workshops with the sponsors

- *Workshop, January 25, 2016*

Thomas André (Schneider Electric & Ecole Polytechnique): Managing societal performance of impact investing: An action-research inquiry
Silvia Rossetto (IDEI and TSE): The Role of Blockholders in the Governance of a Firm. US empirical Evidence

- *Workshop, June 16, 2016*

Marc-Arthur Diaye (Université d'Evry) & **Patricia Crifo** (Ecole Polytechnique): Performance, risque ESG et rémunération
Lionel Almeida (Université Paris Ouest Nanterre): Rémunération des dirigeants et nature de l'actionnariat

- *Workshop, June 29, 2016*

Julien Théron (UT1 Capitole): Codes de Gouvernance: Eclairages Juridiques
Simone Sepe (IAST and TSE): Commitment and Entrenchment in Corporate Governance: Implications for Firm Value

- *Workshop, December 6, 2016*

Jamil Jaballah (Grenoble Ecole de Management) and **Sébastien Pouget** (IDEI and TSE): Facteurs ESG et performance des petites et moyennes capitalisations
Marianne Andries (IDEI and TSE): Pricing long-term risk

- *Workshop, January 13, 2017*

Edouard Challe (Ecole Polytechnique): Country governance and debt: the case of southern Europe 1996-2010
Hideki Takada (OCDE): Green finance and development of green bond market

General audience Conferences

- Conference at Université Paris Dauphine, June 13, 2016: **La Responsabilité Sociale des Entreprises et la performance économique sont-elles compatibles ?**
  Co-organized by Patricia Crifo (Ecole Polytechnique)

- Workshop for the "**Semaine de la finance responsable**", Ecole Normale Supérieure, October 6, 2016: **La transition énergétique, vecteur d'un nouveau régime de croissance ?**
  Co-organized by Patricia Crifo (Ecole Polytechnique)

- Workshop at University Paris 7 Diderot, October 18, 2016: **Gender diversity and company leadership**
  Co-organized by Patricia Crifo (Ecole Polytechnique)

The presentations and programmes are available on the Chaire FDIR website at http://fdir.idei.fr.

2. Communication to academic researchers

The researchers of the Chaire FDIR have been invited to share their work and ideas in various academic conferences and workshops. In their publications or during their presentations, the researchers always gratefully acknowledge the support of the Chaire FDIR.

Examples of academic conferences

- Conference of the European Group of Risk and Insurance Economists, Limassol, "Aversion to risk of regret and preference for positively skewed risks" (18-19.9.16)
- MIT-CEEPR-EPRG-EDF European Energy Policy Conference, Paris, Session: "*Now Comes the Hard Part*": Climate Policy After COP21, "After the 2015 Paris Agreement: Progresses and perils" (7-8.7.16)
- SED Conference, Toulouse, "Early resolution of uncertainty and asset price", "Horizon-Dependent Risk Aversion and the Timing and Pricing of Uncertainty" (1.7.16)
- Annual Conference of the European Association of Environmental and Resources Economists, Zurich, "The climate beta" (23-24.6.16)
- Conference of the 50th anniversary of CORE, Louvain-La-Neuve, "Evaluation of long-dated assets: The role of parameter uncertainty" (26.5.16)

- CESifo European Network on Applied Microeconomics, Munich, “Aversion to risk of regret and preference for positively skewed risks” (14.3.16)
- Annual conference of the Risk Theory Society, New York, “Aversion to risk of regret and preference for positively skewed risks” (1.4.16)
- Keynote lecture, Annual conference of the Canadian Economic Association, “Evaluation des actions de développement durable dans un monde profondément incertain” (10.5.16)
- Climate Future Initiative, Princeton University, “ Do we Do Enough for the Future? A Normative Approach to the Evaluation of Long-Dated Investments” (14.4.16)
- International Conference of Corporate Governance, Montpellier “Ownership Concentration and Firm Risk. Evidence from the US” (17-18.5.16)
- 3rd Law and Economic Policy International Workshop–Recent Developments in Corporate Governance, Paris, “Ownership Concentration and Firm Risk. Evidence from the US” (28-29.11.16)
- Global Corporate Governance Colloquia (GCGC) Conference, Stockholm, “Commitment and Entrenchment in Corporate Governance” (10-11.6.16)
- American Finance Association (AFA) 2016 Annual Meeting, San Francisco, “Staggered Boards and Firm Value, Revisited,” (3-5.1.16)
- Paris Financial Management conference “independent directors: less informed but better selected?”December 2016
- Alliance for Research on Corporate Sustainability: Workshop June 2016 “SRI and systemic change”
- World Finance Conference, New York, July 2016 “gender quota inside the boardroom”
- European Economic Association, Genève, August 2016 “gender quota inside the boardroom”
- American Economic Association, Chicago, January 2016 “gender quota inside the boardroom” and “Southern europe’s institutional decline”

Examples of workshops and seminars

- World Bank, Washington, “Evaluation of long-dated assets: The role of parameter uncertainty” (19.01.16)
- University of Pennsylvania, “Political, Economic and Social Considerations for Universal Carbon Pricing” (2.2.16)
- PER distinguished lecture, Columbia University, “Do we do enough for the future?” (12.2.16)
- Columbia University, “Gamma discounters are short-termist” (7.3.16)
- 33e Université d’été du gouvernement Andorran, Andorre-la-Vieille. Keynote lecture “Comment lutter efficacement contre le changement climatique ? ” (30.8.16)
- IMF-OCP-Columbia high level seminar: The energy transition, NDCs, and the Post-COP21, Marrakesh, “The climate beta” (8.9.16)

- Finance seminar, TSE, “Aversion to risk of regret and preference for positively skewed risks” (3.10.16)
- Seminar Banque de France, “Horizon-Dependent Risk Aversion and the Timing and Pricing of Uncertainty”
- Seminar University of Vienna, “Horizon-Dependent Risk Aversion and the Timing and Pricing of Uncertainty”
- Assises Nationales Etudiantes du Développement Durable, Toulouse, Avril 2016
- Seminar Ecole Polytechnique, “Testing asset pricing theory on six hundred years of stocks returns: Prices and dividends for the Bazacle company from 1372 to 1946” (8.11.16)
- Columbia University, “Precautionay saving and aggregate demand”
- Seminar at Oikos Young Scholar Finance Academy, Reading University, “On the performance of responsible investment”(12-14.9.16)
- Seminar Notre Dame Law School, “Board and Shareholder Power, Revisited” (19.9.16)
- University of Arizona -Department of Philosophy and UC Berkeley School of Law joint conference in Economic Liberties, Human Fulfillment, and Human Rights, Tucson, “Capital and the Public Corporation” (18-19.3.16)

3. General audience reports and communication

Crifo, Patricia, Comment concilier développement économique et environnement, 2016, (with Philippe Aghion et al.), Conseil Economique pour le Développement Durable report.

Crifo Patricia, Et si la performance économique reposait (aussi) sur une politique RSE? Interview For l’Observatoire Energies d’Entreprise (22.02.2016).

Crifo Patricia, and Sandra Cavaco, RSE et performance, Seminar "économie et environnement" Ministry of ecology, sustainable development and energy (21.01.2016).

Crifo Patricia, Les emplois verts, Interview for Radio classique, Program "Trois minutes pour la planète" (12.01.2016).

Gollier, Christian, “A view from Europe”, Conférence AXA/ACPR “The Future of Savings” Conference *Business models and regulatory changes in the new environment* (4.11.16)

Gollier, Christian, “2015 Paris Agreement (COP 21): Progress and Expectations”, The Consulate General of France, New York (25.4.16)

Mottis, Nicolas, 4 videos Xerfi/fnege on Socially Responsible Investment http://www.xerficanal.com/invite/Nicolas-Mottis_g341.html

Pouget, Sébastien, “On the performance of responsible investment”, Seminar “Managing Assets with Conviction and Responsibility” by Candriam, Londres (18.3.16)

Treich, Nicolas, Comment concilier développement économique et environnement, 2016, (with Philippe Aghion et al.), Conseil Economique pour le Développement Durable report.

Treich, Nicolas, L'économie comportementale peut-elle aider à mieux gérer l'environnement?, 2016, forthcoming in le *Guide d'Economie Comportementale 2016*.

4. Awards and others activities in 2016

Gwenael Roudaut received several prizes and awards for his PhD « Corporate governance and firm performance: the sustainability equation? » (Ecole Polytechnique, adv: P. Crifo): ANEDD Prize of the jury, Forum pour l'Investissement Responsable – Principle for Responsible Investment FIR-PRI best PhD award, Institut Français des Administrateurs (IFA)-best PhD award, Association Française de Finance (AFFI) special mention.

Since November 2016 Patricia Crifo is Member of the committee of the Socially Responsible Investment label and Nicolas Mottis is member of the Scientific Councel of the Committee of the Socially Responsible Investment label and of the UNPRI.

Education and training related to the Chaire FDIR

The Chaire FDIR is fostering the diffusion of knowledge on CSR and SRI within the young generations of finance practitioners and researchers. State-of-the-art techniques and ideas of CSR and SRI have been taught in various courses offered to masters in Economics and Finance at the Ecole Polytechnique, at the Toulouse School of Economics, and at the Institut d'Administration des Entreprises (IAE) of the University of Toulouse. Moreover, eight PhD students are currently working on the important issues of the Chaire FDIR.

1. Courses

- Economic growth and sustainability, Cours ECO572 Ecole Polytechnique, PA Ecoscience, avec Bernard Sinclair Desgagné (20h)
- Stratégies Développement Durable des Entreprises - Master2 Economie du Dév Durable, de l'environnement et de l'energie, AgroParistech, Univ Paris Ouest & Ecole Polytechnique (20h)
- Creationde valeur et gouvernance, 3e année Ecole Polytechnique
- Responsabilité Sociale et Environnementale - Master2 DDET, Univ Paris Ouest (20h)
- Entreprise et Société - Master2 IES, Univ Paris Ouest (24h)
- La responsabilité sociale des entreprises, mastère ALISEE, AgroParisTech (3h)
- Valorisation de la performance extra-financière des entreprises, spécialité économie et gestion d'entreprises, 3ème année du cursus ingénieur d'AgroParisTech (M2) (3h)
- Sustainable performance, ESSEC (20h)
- Master in Finance, IAE (University of Toulouse): Asset Management (12h)
- Master in Finance, IAE (University of Toulouse): SRI (12h)
- Master in Economics, Toulouse School of Economics: Economics of risk and insurance: taking into account the long-term impacts of investments (27h)
- Master in Economics, Toulouse School of Economics: benefit-cost analysis (30 h)
- Master in Economics, Université Paris-Saclay: Macro-finance (24h)

2. PhD Students

PhD students of the Chaire FDIR in 2016 included:

- Liviu Andronic: Extra-financial information and financial forecasts, defended on September 30, 2016 (advisor: S. Pouget)

- Madalena Ferrana: Fairness in Cost Benefit Analysis: Equity-Enhanced Mean Variance Rules, Started in September 2012 (advisor: C. Gollier)
- Aymeric Guidoux: CSR and governance, Ecole Polytechnique, started in 2015 (advisor: Patricia Crifo)
- Yann Kervinio: Fairness in natural resources management, started in September 2011 (advisor: S. Ambec)
- Yves Le Yaouanq: Biases in individual and collective decision-making, defended on November 3, 2016 (advisor: C. Gollier)
- Rim Oueghlissi CSR and performance, Université d'Evry Val d'Essonne. Defended on 26/02/16 (co-advisor: Patricia Crifo)
- Maxime Wavasseur: On the pricing of long-term assets, started in 2014 (advisor: S. Pouget)
- Yuting Yang: Risk and responsibility, started in 2015 (advisor: N. Treich)