Toulouse School of Economics

SCOR FOUNDATION FOR SCIENCE

SCOR Chair Risk Markets & Value Creation
Activity report 2023

Economics for the common good

INTRODUCTION

Risk management and decision under uncertainty have been the raison d'être of the Chair Risk markets and value creation since its creation in 2008. Supported by SCOR and its corporate foundation, TSE has developed over the past 16 years both theoretical and applied novel research to better understand how risk shapes the world. The SCOR Foundation for science has renewed its support to TSE for this Chair for a further three-year period.

As we present our activity report for the twelve first months of this renewed partnership, researchers involved in the chair would like to pay a grateful tribute to Denis Kessler, CEO of SCOR at the inception of the collaboration, who passed away in June 2023. Denis Kessler was not only a patron of research; he was also an intellectual who always understood the importance of academic and theoretical works.

As a reminder of our framework agreement, the expected outputs and deliverables for the Chair are the following:

- Developing research work on the four risk-related themes in which TSE researchers are involved. (See the list of themes and projects, as well of the list of researchers involved in appendix)
- Organization of one conference every 18 months (or two over the duration of the partnership)
- Organization of one or two workshop(s) or webinar(s) per year
- Editing a biannual newsletter (Journal of the SCOR-TSE Partnership)
- Organization of an annual meeting of the steering committee in charge of thematic validation.

This report focuses on the outputs and deliverables for the period from June 1st, 2023, to May 31, 2024. Minor adjustments to the initial projects for this period are to be noticed, as the new agreement for the Chair was only officially signed at the biggening of January 2024 (signature with retroactive effect), and as much energy as been devoted to the organization of the academic conference in honor of Denis Kessler which was due to take place in February but which was postponed to a later date at the request of SCOR.

PUBLISHED WORKS AND SCIENTIFIC CONTRIBUTIONS

One of the special features of the Chair is to combine different methodologies from financial economics, industrial organization and econometrics which enables us to cover a broad spectrum of risk-related issues.

The projects encouraged by the SCOR Foundation for Science in the context of our research Chair have given rise to working papers and articles over the period from June 2023 to June 2023. They are listed below for the given period:

A. Articles in peer-reviewed journals

Marie-Louise Leroux and **Pierre Pestieau** - "Age and health related non-linear inheritance taxation", Canadian Journal of Economics, 56, 897-912, August 2023

Jérôme Klimaviciute and **Pierre Pestieau** – "The economics of long-term care. An overview," The Journal of Economic Surveys, 37, 1192-1213, September 2023

Olivier Armantier, Jérôme Foncel, and **Nicolas Treich** - "Insurance and portfolio decisions: Two sides of the same coin?", Journal of Financial Economics, Volume 148, Issue 3, June 2023, Pages 201-219

Romain Espinosa, and **Nicolas Treich** - "Eliciting Non-hypothetical Willingness-to-pay for Novel Products: An Application to Cultured Meat", Environmental and Resource Economics, vol. 85, August 2023, p. 673–706

Philippe De Donder, Martin Boyer, Claude Fluet, Pierre-Carl Michaud, and **Marie-Louise Leroux** - "La mauvaise perception des risques de longévité et de dépendance ne suffit pas à expliquer la faiblesse du marché de l'assurance dépendance (au Canada)", Revue d'économie financière, n. 151, November 2023

Chiara Canta, Helmuth Cremer, and **Firouz Gahvari** - "Welfare-improving tax evasion", The Scandinavian Journal of Economics, vol. 126, n° 1, January 2024, p. 98–126

Francesca Barigozzi, and **Helmuth Cremer** - "Shining with the stars: Competition, screening, and concern for coworkers' quality", Games and Economic Behavior, vol. 144, 2024, p. 250–283

Pierre Pestieau – La dépendance en Europe. Perspectives, Revue d'Économie Financière, 152, February 2024, 15-26.

Chiara Canta, Pierre Pestieau, and **Jérôme Schoenmaeckers** - Blood and gender bias in informal care within the family?, Review of Economics of the Household, 22, June 2024, 595-631

Chiara Canta, **Helmuth Cremer** and **Firouz Gahvari** - Welfare improving tax evasion, Scandinavian Journal of Economics, 126, February 2024, 98-126.

B. Working papers under review

Eduardo Abi Jaber and **Stéphane Villeneuve**, "Gaussian Agency problems with memory and Linear Contracts", Finance and Stochastics, October 2024 (forthcoming)

Jean-Paul Décamps, **Fabien Gensbittel**, and **Thomas Mariotti** - "Investment Timing and Technological Breakthroughs", Mathematics of Operations Research (forthcoming 2024)

C. Working papers

Catarina Goulão and **Agustín Pérez-Barahona** - "Health aspirations and the epidemic of non-communicable chronic diseases", TSE Working Paper, n° 21-1236, July 2021, revised June 2023

Philippe De Donder, Bertrand Achou, Franca Glenzer, Minjoon Lee, and **Marie-Louise Leroux** - "At Home versus in a Nursing Home: Long-term Care Settings and Marginal Utility", CESifo Working Paper No. 10482, June 2023

Louise Guillouet, and **David Martimort**, « Acting in the Darkness: Towards some Foundations for the Precautionary Principle », TSE Working Paper, n° 23-1411, February 2023, Revised the January 5, 2024.

Philippe De Donder and **David Bardey** - "A Welfare Analysis of Genetic Testing in Health Insurance Markets with Adverse Selection and Prevention", TSE Working Paper, n. 19-1035, September 2019, revised January 22, 2024

Stéphane Villeneuve, Bruno Biais, Hans Gersbach, Jean-Charles Rochet, and **Ernst-Ludwig von Thadden** - "Dynamic Contracting with Many Agents", TSE Working Paper, n° 24-1511, February 2024

Felix Dammann, Néofytos Rodosthenous and **Stéphane Villeneuve**, "Debt management game and debt ceiling", TSE Working Paper, n° 23-1430, April 2023, Revised in March 2024, Applied mathematics and optimization

Matthew D. Adler, **Maddalena Ferranna**, **James K. Hammitt, Eugénie** and **Laubier**, **Nicolas Treich** - "Fair Innings: An Empirical Test"

D. Books

The Economics of Social Protection, by Pierre Pestieau, published online Cambridge University Press (Cambridge Elements – Public Economics), on September 2023.

Summary: "The objective of this Element is to provide an analysis of social protection from an economic perspective. It relies on tools and methods widely used in public and insurance economics and comprises four main sections besides the introduction. The first section is devoted to the design of social protection programs and their political sustainability. The second section assesses the efficiency and performance of social protection programs, and of the welfare state as a whole. In the third section, the relative merits of social and private insurance are analyzed as well as the design of optimum insurance contract with emphasis on health and pensions. The last section focuses on the implications of asymmetric information that may lead governments to adopt policies that would otherwise be rejected in a perfect information setting."

FOCUS ON A SELECTION OF PROJECTS

Below are three examples of works-in-progress directly enabled or stimulated by the partnership between TSE and the SCOR Foundation for Science. We focused on these three projects as they have shown the most progress since June 2023.

A. Age and health related non-linear inheritance taxation (Theme: Health economics and aging)

The research paper 'Age and Health Related Non-linear Inheritance Taxation' by Marie-Louise Leroux and Pierre Pestieau was published in the Canadian Journal of Economics in August 2023 (vol. 75, pp. 117–141).

Summary: Marie-Louise Leroux and Pierre Pestieau study the design of optimal non linear bequest taxation when individuals differ in wage, survival and probability to become dependent at the old age. Following the recent health and economic literature, they assume that agents with higher wage have higher survival chances and lower risks to become dependent. Agents make precautionary savings for their old age taking into account the uncertainty on their health. They exhibit joy of giving utility, so that they also set aside money for their heirs. The authors establish that, in the absence of annuity and long-term care (LTC) insurance markets, heirs obtain different levels of bequests, depending on whether the donor died early or late in life and whether he was healthy at time of death. To stick to reality, the authors assume that the government does not observe the decomposition of bequests between voluntary and involuntary ones. Instead, it observes the timing of death and the health condition at death of the donor. They show that, under asymmetric information, on top of marginal income taxation, the bequests left by low-income individuals in case of early death should be taxed at the margin. To the opposite, bequests obtained later in life need not be taxed or subsidized at the margin.

B. Investment Timing and Technological Breakthroughs (Theme: Green Challenges for Long-term Investments)

Among the working papers which publication in a scientific review will occur soon (in this case "Mathematics of Operations Research" - an international journal of the Institute for Operations Research and the Management Sciences), the work of Jean-Paul Décamps, Fabien Gensbittel and Thomas Mariotti "Investment Timing and Technological Breakthroughs".

Summary: Technology adoption under technological uncertainty may depend critically on market conditions. For example, the incentives of aircraft manufacturers to develop new airplanes can hardly be divorced from the evolution of air traffic, and thus from airlines' willingness to invest in new equipment. Similarly, the incentives of arms manufacturers to develop new weapon systems depend on geopolitical factors that affect the DoD's willingness to acquire such weapons. Another example where the arrival of a new technology has arguably been tied to market conditions is the development of mRNA vaccines in the wake of the global COVID pandemic. To address these issues, the authors develop a new model of investment under technological and cash-flow uncertainty in which a firm at any time can irreversibly invest in a state-of-the-art technology or wait for a technological breakthrough. The distinctive feature of their model is that the values of the state-of-the-art technology and of the superior technology depend on current market conditions, and that the occurrence of technological breakthroughs is correlated with the evolution of market conditions. The Markov state variables for the optimal investment policy are the current market conditions and their historic maximum. The main insight from their analysis is that investment in the state-of-the-art technology should only occurs in busts, when market conditions deteriorate sufficiently after reaching a maximum; they provide a complete characterization of the corresponding optimal investment boundary. By contrast, investments in new technologies requiring the active cooperation of developers should take place in booms. This intuitively reflects that the state-of-the-art technology becomes attractive only when the firm becomes pessimistic enough about a breakthrough being forthcoming. As a result, and in contrast with standard models of investment under uncertainty, the firm bears downside risk, in addition to the upside potential associated to technological breakthroughs. A decrease in development costs, or an increase in the value of the new technology, makes the firm more prone to bear downside risk and to delay investment in the state-of-the-art technology.

C. Acting in the Darkness: Towards some Foundations for the Precautionary Principle (Theme: Green Challenges for Long-term Investments)

In the same theme than previously, Louise Guillouet and David Martimort wrote the working paper "Acting in the Darkness: Towards some Foundations for the Precautionary Principle" which has been revised the January 5, 2024.

Summary: The major environmental and health issues that pertain to our modern risk society are most often due to our own production and consumption. When dealing with such risks, decision-making is complicated by two features that make the standard tools of cost-benefit analysis of limited value. The first specificity is that consumption and production choices might entail irreversibility. The most salient example is given by global warming. Pollutants have been accumulating in the atmosphere from the beginning of the industrial era, leading to a steady increase in temperature. All current or planned efforts against global warming consist in controlling the growth rate of temperature, with little hope of reducing it. The second feature of those problems is that the costs and benefits of any decision have to be assessed under significant uncertainty. Although the consequences of acting might be detrimental to the environment, the extent to which it is so and the probability of harmful events remain to a large extent unknown to decision-makers when acting.
This paper proposes a simple model of dynamic decision-making under irreversibility and uncertainty that aims at giving theoretical foundations for the Precautionary Principle and assesses its relevance in practice.

D. Behavioral Insurance Economics (Theme: Behavioral Economics)

The objective of the research project of Nicolas Treich is to explore both theoretically and empirically the impact of behavioral limitations on insurance demand and insurance markets more generally (see Appendix for a summary of this project). His research project lies at the interface of insurance and behavioral economics. It aims to better understand the role of the supply side of the insurance market in exacerbating or instead mitigating those behavioral failures.

As part of this project, Nicolas Treich's work focused on behavioral economics applied to insurance and finance, with his paper "Insurance and portfolio decisions: Two sides of the same coin?" and on the general population's perception of health priorities with "Fair Innings: An Empirical Test". The same paper highlights the psychological and moral intuition, the principle of equal treatment, that priorities should not be set, which is opposed to general principles of efficiency and fairness.

E. Debt management game and debt ceiling (Theme: Capital Requirements for Insurance Companies)

Felix Dammann, Néofytos Rodosthenous and Stéphane Villeneuve wrote the working paper "Debt Management Game and Debt Ceiling", which has been revised in March 2024.

Summary: There is probably no more topical issue in macroeconomics than the determination of the optimal level of debt that favours both its sustainability and the long-term growth of an economy. Although paramount and extensively studied in the literature, the question of the optimal debt level has not yet received clear theoretical foundations.
This lack of a consensual theoretical framework has led to the implementation of exogenous mechanisms to monitor the level of debt. In USA, one of these mechanisms is the statutory debt ceiling which restricts the amount of debt a government can be permitted to issue. These have proven to be more or less effective and resulted in a constant upward revision of the debt ceiling. The traditional analysis of public debt has shown that high public debt has a negative effect on long-term economic growth giving an argument to debt ceiling advocates. Indeed, a high level of debt generates high risk premiums that reflect creditors' doubts about the government's ability to refinance itself. Being unable not only to repay its debts but also to pay for the excess of its expenditures over its revenues, the government must then immediately balance its budget by taking exceptional measures, like increasing taxes and/or cutting its investments, which can have a dramatic impact on growth, or alternatively negotiate the lift of the debt ceiling to avoid the huge costs of the aforementioned measures. The latter negotiation could be challenging, when the governing party is different from the majority party in the House of Representatives (and/or the Senate), as is often the case in the United States. On the other hand, the positive effect of a high level of public debt on growth should not be overlooked since public investments in social policies, education, healthcare, justice, research, and infrastructure help private initiatives to develop effectively. As Blanchard observed in his presidential address to the American Economic Association, as long as the interest rate is lower than the growth rate, a large deficit can be allowed without increasing the debt-to-GDP ratio.
The subject of this paper is the study of the debt management game between two groups with opposing interests; on one hand, a government inclined to increase the debt, and, on the other hand, a legislature concerned with imposing a mechanism limiting the level of debt.

SCIENTIFIC EVENTS

A. Sustainable Finance Conference, December 7-8, 2023 – TSE

TSE held the 3rd edition of its Sustainable Finance Conference on 2023, December 7th and 8th, in Toulouse. This Conference, which was also accessible to a wide audience via Zoom, was organized with the support of the partners of the TSE Sustainable Finance Center, including the SCOR Foundation for Science.
In the "Climate risks and regulation" panel discussion, several experts were invited to share their views about the insurance and reinsurance industry, and the impact of climate change on the sector. Speaker at the conference, **Marie-Laure Fandeur, Head of P&C ESG at SCOR,** has described the use of hazard, vulnerability, and financial modules in assessing risks. She was also able to highlight the fact that the pressure exerted by EU regulations to promote transparency was viewed favourably by reinsurers such as SCOR.

https://www.tse-fr.eu/conferences/2023-3rd-sustainable-finance-conference

B. Denis Kessler Tribute Conference, February 16, 2024 – SCOR (Postponed)

TSE and the SCOR Foundation for Science have joined forces to organize a tribute to Denis Kessler. The idea behind the conference was to commemorate Denis Kessler's contribution to the world of economics research, and to evoke memories of the intellectual debates that fascinated him.

C. Public Economics and Aging Conference, May 23-24, 2024 - TSE

Within the framework of the agreement and the organization of an annual TSE-SCOR convention, some 20 researchers gathered in Toulouse for this conference sponsored by the Chair. The Conference was structured around three themes: Aging Economics, Environmental Policy and Public Finance. Academics who shared their insights were affiliated to a wide range of prestigious research institutions across the world including University of York, Université du Québec, Universidad de Los Andes, and University of Liège.

https://www.tse-fr.eu/fr/conferences/2024-public-economics-and-aging-conference

BILATERAL MEETINGS

On December 8th, 2023, Philippe Trainar and Zeying Peuillet (for the SCOR Foundation for Science), and Stéphane Villeneuve and Christian Gollier (for TSE) met online to establish the possible framework for the official renewal of the SCOR-TSE Chair.

In addition, monthly meetings, involving often Zeying Peuillet (for the SCOR Foundation for Science), Stéphane Villeneuve (for TSE) either online or in person, have been held since January 2024 to ensure follow-up on the partnership, and prepare upcoming conferences or workshops.

The coordinator of the partnership plans to organize a meeting of the steering committee of the Chair in upcoming months.

2023 SCOR AWARDS

The SCOR Risk Markets and Value Creation Chair supports the awards organized within the framework of the annual seminar of the European Group of Risk and Insurance Economists (EGRIE).

A. SCOR-EGRIE Young Economist Best Paper Award

The SCOR-EGRIE prize for the best paper written by a young economist is organized under the responsibility of the "Risk Markets and Value creation" chair of TSE-P and the Dauphine University of Paris. It is sponsored by the SCOR Foundation for Science and the Risk Foundation.

The selection committee is composed of five people representing the following institutions: EGRIE, SCOR, Fondation du Risque, Dauphine, and TSE-P. (Christophe Courbage *Geneva Association,* Elyes Jouini *Université Paris Dauphine,* Philippe Trainar *Fondation SCOR,* Bertrand Villeneuve *Université Paris Dauphine and* Stéphane Villeneuve *Toulouse School of Economics).*

During the 2023 annual seminar of the European Group of Risk and Insurance Economists, the prize "SCOR-EGRIE Young Economist Best Paper Award" was awarded to **Moritz Loewenfeld** (TSE) and **Jiakun Zheng** (Aix-Marseille School of Economics) for the paper

"*Uncovering correlation sensitivity in decision making under risk*".


Moritz Loewenfeld


Jiakun Zheng

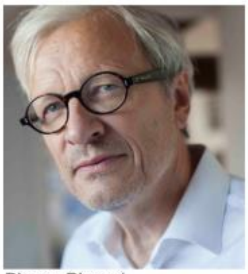
B. SCOR – The Geneva Risk and Insurance Review Best Paper Award

For the SCOR-Geneva Risk and Insurance Review Best Paper Award for the best paper published in the *Geneva Risk and Insurance Review, t*he selection committee is composed of the editors and associate editors of the *Geneva Risk and Insurance Review* (GRIR).

The 2023 prize was awarded to **Enrico Biffis** (Imperial College London & Nanyang Business School), **Erik Chavez** (Imperial College London), **Alexis Louaas** (Ecole Polytechnique & Square Research Center), and **Pierre Picard** (Ecole Polytechnique) for their paper "*Parametric insurance and technology adoption in developing countries*".


Enrico Biffis


Alexis Louaas


Pierre Picard

TSE-SCOR FOUNDATION FOR SCIENCE JOURNAL

This journal highlights articles from TSE researchers or, in some cases, researchers from prestigious universities who have been involved in the activities of the Chair, as well as prizes, past or upcoming events, or any other news related to the collaboration between TSE and the SCOR Foundation for Science. The Journals are also disseminated on TSE's social networks, in the "TSE Reflect" newsletter for practitioners and on the TSE webpage dedicated to the Chair.

The lastest issue of the Journal was an occasion to disseminate popularized versions of two papers authored by TSE researchers who are involved with the Chair:

- H. Cremer - "Shining with the stars", TSE-SCOR Foundation for Science Journal, june, 5-6.
- E. Thibault - "Life expectancy, income and long-term care", TSE-SCOR Foundation for Science Journal, june, 7-9.

Latest issue (June 2024):
https://www.tse-fr.eu/sites/default/files/TSE/documents/CenterFinance/Cahiers/journal-tse-scor-june2024.pdf

OTHER OUTREACH MATERIAL

A. TSE newsletter

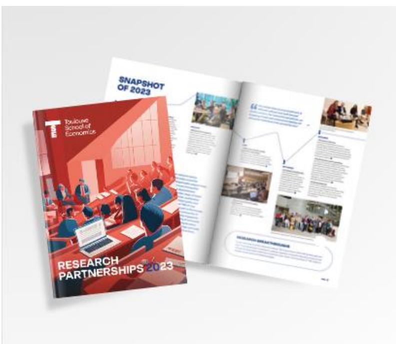
The work undertaken with the support of the SCOR Foundation for Science, and the events organized with its support, have also been a regular feature of the TSE newsletter. TSE sends out the monthly e-newsletter TSE Reflect (whose theme varies each month) to share the latest work of its researchers with economic decision-makers, and first and foremost with its partners. The theme of sustainable finance is addressed twice a year, and the other regular topics are energy and climate, infrastructure and networks, health, the digital economy, regulation and competition.

Our work with the SCOR Foundation for Science was featured in the two 2024 sustainable finance newsletters: February 2024 and June 2024.

B. TSE-P annual report

The partnership with the SCOR Foundation for Science is highlighted in our annual report which has been sent to all our partners and contacts interested in the TSE-P activities.

Research Partnerships Report for 2023



UPCOMING EVENTS

- Presentation of his research work by a TSE researcher on the occasion of a webinar organized by SCOR on September 19, 2024
- Workshop on Machine learning in Econometrics, November 2024
- Workshop on Behaviorial Economics and Insurance – Nicolas Treich, November 2025

APPENDIX

A. Lists of members of the scientific team and the scientific council

Scientific team:
- Andrea Attar
- Milo Bianchi
- Helmuth Cremer
- Philippe De Donder
- Jean-Paul Décamps
- Christian Gollier - **Co- Head of the Chair**
- Catarina Goulao
- Jean-Marie Lozachmeur
- Pierre Pestieau (TSE faculty associate)
- Jean-Charles Rochet
- François Salanié
- Emmanuel Thibault
- Jean Tirole
- Nicolas Treich
- Stéphane Villeneuve - **Head of the Chair**

Scientific Council
- André Lévy-Lang, Chairman, SCOR Corporate Foundation for Science and Chairman of the supervisory board,
- Yassine Lefouili, Director, TSE-Partnership
- Philippe Trainar, Director, SCOR Foundation
- Elyès Jouini, Scientific Directory President, Institut Louis Bachelier
- Louis Eeckhoudt, Professor, School of Management Lille IESEG
- Xavier Freixas, Professor, Pompeu Fabra University Barcelona

B. Full list of research themes and projects as described in the Chair agreement

A. Behavioral Economics

1. Ethics by Jean Tirole

This research project aims to propose a comprehensive review of the ethical considerations when implementing policies to change economic behavior. More generally, all studies that define a theoretical framework to ensure that ethical considerations are part of economic policy issues are at the heart of this project led by Jean Tirole. Questions such as « Do markets encourage unethical behaviors? » will receive a particular attention. On the other hand, technology widens the access to information about our conduct. This project aims at shedding theoretical and empirical light on induced behavioral changes with the booming of digital economy.

2. Behavioral Insurance Economics by Nicolas Treich

Most research in insurance economics has assumed that agents are fully rational. The objective of the research project is to explore both theoretically and empirically the impact of behavioral limitations on insurance demand and insurance markets more generally. Indeed, the domain of insurance provides a rich ground for this investigation since it involves (e.g.) decision under risk and uncertainty, long term effects and complexity. Moreover, recent empirical research has identified several puzzles with classical/rational theories in insurance economics, such as underinsurance of catastrophic risks or overinsurance of home risks (Sydnor 2010), excessive demand for extended warranties (Abito and Salant 2019), over-reaction to recent events (Dumm et al. 2017), preference for dominated choices in the health domain (Bhargava et al. 2017, Handel and Kolstad 2015), inconsistent choices across different insurance domains (Barseghyan et al. 2011) or puzzling wealth effects (Armantier et al. 2022). Several recent papers stress in particular the importance of regret, confirmatory bias, motivated reasoning and social norms in risky decisions as well as the emotional or psychological reaction to dramatic events such as death or severe accidents that may play a role in life insurance or annuity demand for instance. Finally, an important aspect is to understand the strategic dimensions, as insurance companies may exploit consumers' behavioral limitations, or instead help consumers to make better insurance-related decisions (through "nudges" for instance). Hence, this research project which lies at the interface of insurance and behavioral economics may also help better understand the role of the supply side of the insurance market in exacerbating or instead mitigating those behavioral failures.

B. Green Challenges for Long-term Investments

1. Sustainability outside the Gaussian world by Christian Gollier

The tradition in finance and economics is to measure risk mostly by the standard deviation. This is fine only for risks whose distributions have only two parameters, as in the Gaussian world. Recent developments in asset pricing theory and actuarial sciences show that people and institutions are much more averse to extreme events than to “gaussian risks”. This project aims to examine the meaning of these findings to reexamine the notion of long-term sustainability and long-term asset pricing. TSE researcher Christian Gollier will be particularly interested in characterizing climate risks in their non-Gaussian dimensions and statistical relationships with other macroeconomic and financial variables, as they appear in standard integrated assessment models, to reevaluate the social cost of carbon.

2. Tipping Points by Jean-Paul Décamps, David Martimort and Stéphane Villeneuve

Tipping points are critical thresholds about some key variables beyond which a whole system abruptly shifts to a completely new and irreversible state. Environmental damages are thought to be characterized by tipping points. For instance, beyond some threshold of release of greenhouse gases, climate change should be irreversible, leading to high societal costs (Van der Ploeg, F. (2014). “Abrupt Positive Feedback and the Social Cost of Carbon,” European Economic Review, 67: 28-41). Predicting these warning thresholds is challenging. It can be also difficult to observe them and to know whether a system already entered a new irreversible state. Typically, Decision Makers have only incomplete information on the timing and the scope of the changes. For instance, the user of a fragile natural resource must beware of overexploitation that would destroy the resource without however knowing the true threshold of overexploitation. The user of the fragile resource must also take into account the possibility of an abrupt regulation that would impact his/her activity. The regulator for its part has also incomplete information on tipping points, the irreversible nature of the changes and the incurred social costs. How should an optimal policy deal with tipping points that occur at some future random moment? Jean-Paul Décamps, David Martimort and Stéphane Villeneuve propose in this research program to study a generic model for the optimal liquidity management subject to an abrupt change and to use it as workhorse model to investigate several issues on risk management. Drawing on their previous works funded by the chair, they plan to study cash management under the specter of transition issues. How do transition issues impact corporate cash management when the timing and the scope of these transitions are unknown? How does the magnitude of climate policy change uncertainty impacts cash management and the decision to switch to green technologies? How management policies integrate the risk of sudden changes in regulatory policies? Under which risks and under which conditions is it optimal to switch from a brown technology to a green one and what are the consequences on cash management?

3. Cost of capital, liquidity holding and green transition by Jean-Paul Décamps and Stéphane Villeneuve

The green transition relies on access to low-cost capital, so there is a need to reduce the cost of capital for green transition projects. In Europe, a number of regulations have been introduced in recent years to help redirect financial flows towards more sustainable activities. Among these, the taxonomy regulation establishes a classification of economic activities that are considered environmentally sustainable, and promotes their financing with the aim of helping to reduce the cost of capital. Because low-carbon projects are technologically highly constrained or require a major research effort, making them less profitable than proven carbon technologies, decision makers face a trade-off between two distinct sets the first one is subsidized but not necessarily profitable and the second one which is profitable but suffers from a higher cost of capital. The aim of this paper is to quantify this trade-off relying on dynamic corporate finance models that have been successful in providing insights and guidance for investment and financing when financial markets exhibit frictions. A particular attention will be paid to determine the optimal time for a firm exploiting a carbon technology to switch to a more climate-efficient project and how this transition date depends on the characteristics of the regulation in place.

4. Socially Responsible Investment under the threat of Greenwashing by Andrea Attar, Catherine Casamatta, Arnod Chassagnon and Jean-Paul Décamps

The great environmental crisis we are experiencing, together with the numerous social catastrophes and the corporate instability arising at an international level, have dramatically increased the concern of financial institutions for sustainable development. According to the 2020 Global Sustainable Investment Alliance Review, sustainable investment has reached US$35.3 trillion assets under management (a growth of 15% in two years), amounting to 36% of the global asset management industry. In recent years, financial economics research has developed to analyze the conditions for SRI to affect entrepreneurial decisions, thereby generating new channels for economic growth. In such contexts, the traditional presumption that firms should maximize their market value (Friedman, 1970) may no longer be valid, and the investors' pressure over the management to fight environmental damages may instead result in socially desirable outcomes (Broccardo, Hart and Zingales, 2022). In the proposed project, we plan to further investigate this issue, by focusing on a fundamental difficulty faced by sociallyresponsible investors in allocating their capital. Specifically, we will consider the threat of firms' "greenwashing" behaviors, which consist in all manipulations directed at misleading investors by misstating their sustainability initiatives. This is indeed a growing concern for financial market participants who must rely on companies' subjective SRI disclosures to inform their investment decisions (Musciano, 2022). Yet, few, if any, theoretical results are available on the impact of such practices on market allocations. The objective of the researchers involved in this project is to explicitly analyze the agent''incentives to greenwash in a setting where firms need to raise funds to deploy their strategies, and where the social impact (or "greenness") of these strategies is not perfectly observable. They plan to investigate two distinct questions:

i) Can SRI funds manage to improve the behavior of their portfolio companies when they cannot fully monitor the responsible conduct of their investees? Is it possible to sustain green strategies that ensure the transition towards a green economy?

iii) How do firms' incentives to implement responsible strategies vary when both SRI and non-SRI funds can provide capital to implement the firms' projects? In other words, what social outcome can be achieved when funds with different preferences for green/responsible outcomes coexist on the market. Several recent papers have analyzed the equilibrium return of green and brown firms in the presence of heterogenous investors (see, for instance, Pastor, Stambaugh and Taylor, 2021). Still few have considered how the resulting allocation of capital can affect firms' incentives to develop green strategies. Overall, it is expected that this project yields novel results both at a positive and at a normative level. In positive terms, the researchers will contribute to the understanding of the actual conduct of SRI funds, and to shed light on the ongoing debate over the practical impact of SRI. On the normative side, they aim at identifying new forms of regulatory interventions for markets in which socially responsible investors co-exist with conventional ones.

C. Capital requirements for insurance companies

1. Capital requirements for insurance companies by Jean-Charles Rochet and Stéphane Villeneuve

The debate on the costs and benefits of imposing a capital floor on regulated financial institutions has been a major issue for decades, with no real theoretical consensus. The benefits stem from the fact that a larger capital reserve compensates for potential exceptional losses without public intervention, thereby reducing the risk of financial crises, which, as past and recent history has shown, generate substantial economic costs. On the other hand, too high a level of regulatory constraints undermines investment in productive assets by making access to outside financing more expensive, with potentially lasting effects on the level of economic activity. It is therefore important to quantify the scale of these costs and benefits to impose the optimal level of capital requirement. To tackle this question, we plan to build an analytically tractable dynamic macro model along lines of Brunnermeier and Sannikov (AER 2014) taking advantage of recent advances in mean-field optimal control theory. It features incomplete financial markets and two-types of risk-averse agents: regulated financial institutions and firms owners subject to idiosyncratic productivity shocks. In addition, the economy faces an aggregate risk which induces a shock that is all the greater the more undercapitalized the financial institutions. Firm finance their investments by raising outside funds from the capital market through financial institutions. The higher the level of capital, the greater the cost of external financing which has a negative impact on the size of investments. Because the firm revenues are private information, the social planner aims to design a dynamic multi-agent mechanism to share risk and optimize inter temporal production and consumption.

D. Health Economics and Aging

1. Screening for fragility with primary and secondary prevention by Helmuth Cremer and Jean-Marie Lozachmeur

A better designed dependency policy appears to be required to prevent a grim future for the upcoming "Papy-Boomer" generation. In particular, preventive care should be developed. Helmuth Cremer and Jean-Marie Lozachmeur propose to analyze the optimal long term care policies which include, in addition to long term care expenditures, also primary and secondary prevention policies. The first stage consists in testing and screening individuals for their risk of becoming dependent. This screening procedure would allow to target primary prevention in order to reduce the risk of becoming dependent more effectively. The screening procedure would also allow to offer some secondary prevention aimed at mitigating severity of the affection and maintaining individual's capacities. These two types of prevention are complementary and could increase wellbeing of the elderly as well as decrease long term care expenses by reducing health and nursing homes expenditures.

2. Health economics and ageing: Diets across life courses by Catarina Goulao

Ultra-processed (UP) food consumption has been recently associated with the prevalence of obesity and non-communicable chronic diseases such as some types of cancers, diabetes, and heart diseases. Catarina Goulao will construct a unique longitudinal dataset, between 2002 and 2015, of at-home food consumption of French households and will merge this dataset with information regarding nutritional values and degree of food processing. She will develop a panel data econometric analysis to identify the determinants of ultra-processed food consumption exploiting the within- and betweenhousehold variations. Socio-economic demographics can in principle explain more the between-household variation that the within-household variation. In fact, differences between households are expected to be due to obesity status, age, poverty. Nonetheless, Catarina Goulao wants to understand whether some life events with impact in time constraint are associated higher UP consumption. She expects to understand whether policies aiming at decreasing UP consumption should, on the one hand, focus on specific population groups or, on the other hand, use price reductions as lever for within-household change of consumption patterns.

3. Social norms and consumption by Catarina Goulao

Estimates suggest that 80% of non-communicable chronic diseases (NCDs)' premature deaths would be preventable with an appropriate change in its most important risk factors such as unhealthy eating, smoking and physical inactivity. The question this project rises is whether there could be a mechanism that could halt obesity and NCDs epidemics from the inner of society. Catarina Goulao proposes a model where consumption norms affect the dynamics of an epidemic of NCDs. First, she will model the epidemics of NCDs by allowing adulthood consumption choices to impact their health capital, which is in part inherited by their offspring and affects their probability of developing a NCD. This mechanism gives rise to an intergenerational externality that would be at the origin of high prevalence levels of NCDs. Then, an additional layer of externality is introduced by allowing for consumption comparisons across cohorts. Individuals learn from previous generations their reference group and what they are expected to eat. This mechanism might counterbalance the former intergenerational externality leading to lower levels of NCDs. Fiscal policies alone or combined with public policies regarding eating comparisons, i.e., consumption norms, can be used to internalize externalities and restore optimality.

4. Social LTC insurance with different sources of dependence by Pierre Pestieau

The need for LTC will increase significantly for those aged 80 and over, and in particular for older women who live longer. LTC economists tend to consider dependence as a one-dimensional reality, whose only variability would be its severity. In reality, there are different sources of old age dependence. Among these sources, one can cite age-related disabilities from chronic diseases such as pulmonary disease and diabetes, age-related loss of hearing, sight and movement (arthritis), cognitive illnesses such as dementia and Alzheimer. It is important to take into account this heterogeneity. Medical and nursing treatment can vary from one type to another. And social policy can also vary from one type to another. Consider the natural distinction between chronic diseases and dementia. It would seem that the former requires a much more medical approach than the latter. Secondly, if dementia were to affect higher social categories than chronic diseases, one would expect them to benefit less from public support. In this research project, Pierre Pestieau would distinguish between forms of dependency based on the HRS and SHARE panel studies and show how each of them is distributed across the income scale. Then, in a second step, he would develop a theoretical model of social LTC insurance that takes this distinction into account.

5. Bequests, mortality and dependence by Pierre Pestieau and Emmanuel Thibault

Bequest planning can be affected by longevity in two ways. First, in case of premature death, parents involuntarily bequeath the saving they have accumulated for their old days besides what they were intending to transmit to their heirs. Children whose parents pass away prematurely inherit relatively more. Second, in case of disability calling for long-term care (LTC) parents have to deplete their wealth including what they had planned to leave to their children. Empirically, it would be nice to study if the level of bequests depends on these two events, early mortality and disability. Theoretically, Pierre Pestiau and Emmanuel Thibault would study the possibility of using policy tools to maximize the generational steady state utility. Among the instruments they would consider a social LTC insurance and taxes on bequests that could be contingent on whether the parents had a short life or a life with disability.

6. The timing of intergenerational transfers by Helmuth Cremer, Jean-Marie Lozachmeur, Pierre Pestieau and Emmanuel Thibault

The well-known "rotten kid" theorem stipulates that an altruistic parent need not engage in strategic behavior in order to induce his child to maximize family income. As the child's action (like helping his parent) depends on the transfer received, its action internalizes the impact on the family outcome. However, for this theorem to hold, the transfer must be made after the child has chosen his actions. Using a model in which both parents and children are altruistic towards each other, the research team conducting this project wants to study inter-vivo gifts and bequest decisions together with informal care when the timing of bequest and children's aid follows the following sequence: in a first stage parents choose their inter vivo gift; in a second stage, children determine their level of informal care; and finally the parent chooses a bequest. Ultimately, the research team plans to study how the introduction of formal LTC insurance modifies the timing of transfers and the level of informal care.

7. The differential taxation of inter-vivo gifts and bequests and LTC insurance by Helmuth Cremer, Jean-Marie Lozachmeur and Pierre Pestieau

Inter vivo gifts and bequests usually do not face the same tax treatment. In most countries, the taxation scheme on intergenerational transfers favors inter vivo gifts. In this project, the researchers plan to study the optimal tax rates on these two kinds of transfers, and their relation to long term care insurance. In a first pass, they will take the existence of a longterm care insurance contract as given and focus on the optimal differentiated tax treatments of inter vivo gifts and bequests. Their approach will take into account two important dimensions often neglected in the literature. The first aspect is related to the timing of the transfer. While inter vivo gifts target a relatively "young" generation in need of liquidity, the bequest is usually expected to be received later in life (around the retirement age). Another important difference is that these two kinds of transfers may be motivated by different donor's objectives. As an example, the inter vivo gift may be motivated by parents' altruism while bequests are motivated by joy of giving. In a second pass, they plan to analyze the impact of LTC insurance contracts on the optimal differential taxation of inter vivos and bequests.

8. Worker's motivation and quality of care in nursing homes by Helmuth Cremer

The supply side of formal Long-Term-Care and particularly the organization of the nursing home sector has been mostly neglected in the literature. We take a first step to fill this gap. A striking feature of this sector is that public, for profit and nonprofit providers typically coexist, and compete for patients and nurses. Helmuth Cremer considers a setting with two nursing homes which can be either for profit or nonprofit organizations. Nursing homes differ in two quality dimensions: "hotel" quality and quality of care, which depends on the motivation of nurses hired. Nurses differ in their intrinsic motivation for working in a retirement home and for any of them motivation is higher when they work for a nonprofit organization. Helmuth Cremer plans to determine the equilibria achieved under various configurations and compare their welfare implications. He is particularly interested in determining conditions under which a mixed market is optimal.

C. Program - Sustainable Finance Conference – December 7-8, 2023 – TSE

3rd Sustainable Finance Conference

Toulouse, December 7 & 8, 2023

CONFERENCE VENUE
Toulouse School of Economics (TSE)
Auditorium 3 Jean-Jacques Laffont
1, Esplanade de l'Université
31080 Toulouse Cedex 06

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Organized by

Sustainable Finance Center
Toulouse School of Economics

With the support of
The partners of the TSE Sustainable Finance Center

Thursday, December 7, 2023

08:30 – 09:00 Registration & Welcome coffee ➤ *Auditorium 3*

09:00 – 11:35 **SESSION 1: FINANCIAL STABILITY**

CHAIR: Fany DECLERCK (TSE) ➤ *Auditorium 3*

Cyril MONNET (University of Bern & Gerzensee), Asgerdur PETURSDOTTIR (University of Bath) and **Mariana ROJAS-BREU** (Université Paris-Panthéon-Assas)
"Central Bank Account for All: Efficiency and Risk Taking "

Marteen VAN OORDT (VU) and **Charles KAHN** (University of Illinois)
"The Demand for Programmable Payments"

10:30 – 10:50 *Coffee break* ➤ *Cafeteria*

Tristan JOURDE (Banque de France) and Quentin MOREAU (Hong Kong University of Science and Technology)
"Systemic Climate Risk"

11:35 – 11:45 *Short break*

11:45 – 12:45 **PANEL CLIMATE RISKS AND REGULATION** ➤ *Auditorium 3*

MODERATOR: Sophie Moinas (TSE)

Marie-Laure FANDEUR, Head of P&C ESG • Alternative Solutions, SCOR
Jean-Philippe DESMARTIN, Head of Responsible Investment, Edmond de Rothschild Asset Management
Laurent CLERC, Director for Research and Risk Analysis, Autorité de Contrôle Prudentiel et de Résolution
Sébastien POUGET, Professor of Finance, TSE

12:45 – 14:00 *Lunch break* ➤ *Cafeteria*

14:00 – 17:30 **SESSION 2: RESPONSIBLE FINANCE AND LONG-TERM INVESTMENTS**

CHAIR: Catherine CASAMATTA (TSE) ➤ *Auditorium 3*

Stefano GIGLIO (Yale University), Theresa KUCHLER (New York University), Johannes STROEBEL (New York University) and **Xuran ZENG** (New York University)
"Biodiversity Risk"

Alexandre GAREL (Audencia Business School), **Arthur ROMEC** (Toulouse Business School), Zacharias SAUTNER (University of Zurich) and Alexandre F. WAGNER (University of Zurich)
"Do Investors Care about Biodiversity? "

15:30 – 16:00 *Coffee break* ➤ *Cafeteria*

Caroline FLAMMER (Columbia University), **Thomas GIROUX** (CREST (ENSAE), Geoffrey M. HEAL (Columbia University)
"Biodiversity Finance"

Yurii HANDZIUK (HEC Paris) and **Stefano LOVO** (HEC Paris),
"Carbon Information, Pricing, and Bans. Evidence from a Field Experiment"

19:30 **Dinner** *(upon invitation)*

Friday, December 8, 2023

08:45 – 09:00	Welcome coffee ➤ *Cafeteria*
09:00 – 12:30	**SESSION 3: FINANCIAL TECHNOLOGIES & DIGITAL MARKETS**
	CHAIR: Matthieu BOUVARD (TSE) ➤ *Auditorium 3*
	Angelo RANALDO (University of St Gallen), **Ganesh VISWANATH-NATRAJ** (Warwick Business School) and Junxuan WANG (Cambridge Judge Business School) *"Blockchain Currency Markets"*
	Katya MALINOVA (Mc Master University) and **Andreas PARK** (University of Toronto) *"Learning from DeFi: Would Automated Market Makers Improve Equity Trading?"*
10:30 – 11:00	*Coffee break* ➤ *Cafeteria*
	Christophe HURLIN (University of Orléans), **Christophe PERIGNON** (HEC Paris) and Sébastien SAURIN (University of Orléans) *"The Fairness of Credit Scoring Models"*
	Fiona GREIG (University of Chicago Booth School of Business), Tarun RAMADORAI (Imperial College London), Alberto G. ROSSI (Georgetown University Mc Donough School of Business) Steve UTKUS (Wharton Business School) and **Ansgar WALTHER** (Imperial College) *"Algorithm Aversion: Theory and Evidence from Robo-Advice"*
12:30 – 13:30	*Lunch break* ➤ *Cafeteria*
13:30 – 14:30	**PANEL AI IN FINANCE** ➤ *Auditorium 3*
	MODERATOR: Milo BIANCHI (TSE)
	Marie BRIERE, Head of Investor Intelligence and Academic Partnerships, Amundi Asset Management **Kheira BENHAMI**, Chief Economist and Director of the Analysis, Financial Stability and Risk Division, Autorité des Marchés Financiers **Xavier VIVES**, Professor of Economics and Finance, IESE Business School & TSE
14:30 – 14:40	*Short break*
14:40 – 16:30	**SESSION 4: PRIVACY**
	CHAIR: Stéphane VILLENEUVE (TSE) ➤ *Auditorium 3*
	Bo BIAN (UBC Sauder School of Business), **Xinchen MA** (London School of Economics) and Huan TANG (University of Pennsylvania) *"The Supply and Demand for Data Privacy: Evidence from Mobile Apps"*
15:25 – 15:45	*Coffee break* ➤ *Cafeteria*
	Bruno JULLIEN (TSE), Yassine LEFOUILI (TSE) and Michael H. RIORDAN (University of Columbia) *"Privacy Protection, Security, and Consumer Retention"*
16:30 – 16:45	**CONCLUDING REMARKS**

D. Program – Denis Kessler Tribue Conference - February 16, 2024 – SCOR (Postponed)

Denis Kessler Tribute Conference

February 16, 2024

CONFERENCE VENUE
SCOR
5, Avenue Kléber
75795 Paris Cedex 16
France

ORGANIZING COMMITTEE
Stéphane VILLENEUVE (Toulouse School of Economics)
Christian GOLLIER (Toulouse School of Economics)
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Organized by

Toulouse School of Economics

Université Toulouse Capitole

SCOR Foundation for Science

With the support of

Fondation du Risque Louis Bachelier

Friday, February 16, 2024

13:30 - 14:00	Opening words

- **Stéphane VILLENEUVE** (Toulouse School of Economics)
- **Thierry LEGER** (SCOR Group)
- **Jean TIROLE** (Toulouse School of Economics)

14:00 - 15:30 Presentations

Pierre-André CHIAPPORI (Columbia University, SCOR Foundation for Science)
Human Capital and the Family

Georges DIONNE (HEC Montréal)
Insurers' M&A in the United States during the 1990-2022 period

15:30 - 16:00	Coffee break

16:00 - 17:30 Presentations

Gilles SAINT-PAUL (Paris School of Economics)
Artificial Intelligence, Post-Fordism, and Redistribution: An Oligarchic Perspective

Jean TIROLE (Toulouse School of Economics)
Privacy in the digital age

17:30 - 18:45 ROUND TABLE: discussions and testimonials

Panel moderator: **Christian GOLLIER** (Toulouse School of Economics)

With, in order of intervention:

- **Michel PEBEREAU** (BNP Paribas honorary chairman)
- **Philippe TRAINAR** (SCOR Foundation for Science)
- **André MASSON** (Paris School of Economics)
- **Pierre PESTIEAU** (University of Liège)

18:45 - 20:30 Cocktail at the SCOR Brasserie (6th floor)

E. Program - Public Economics and Aging Conference, May 23-24, 2024 – TSE

Public Economics and Aging conference

Conference in honour of the 65th birthday of Helmuth Cremer

Toulouse, May 23-24, 2024

CONFERENCE VENUE
Toulouse School of Economics (TSE)
1, Esplanade de l'Université
Auditorium 3 Jean-Jacques Laffont
31080 Toulouse, France

ORGANIZING COMMITTEE
Jean-Marie LOZACHMEUR (TSE)
Pierre PESTIEAU (University of Liège)
Emmanuel THIBAULT (University of Perpignan & TSE)

CONFERENCE SECRETARIAT
Florence CHAUVET & Christelle FAUCHIE
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Thursday, May 23, 2024

9:00 – 9:30	**Registration**
9:30 – 9:45	INTRODUCTION **Yassine LEFOUILI** (Director of TSE-Partnership)
9:45 – 11:05	AGEING ECONOMICS 1 **CHAIR: Francesca BARIGOZZI** (University of Bologna) **Luigi SICILIANI** (University of York) *Do delayed admissions to nursing homes increase hospital use?* **Marie-Louise LEROUX** (Université du Québec à Montréal) *At home versus in a nursing home: long-term care settings and marginal utility*
11:05 – 11:35	**Coffee break**
11:35 – 12:55	AGEING ECONOMICS 2 **CHAIR: Carine FRANC** (INSERM) **Chiara CANTA** (Toulouse Business School) *Workers motivation and quality of care in nursing homes* **Gregory PONTHIERE** (Université Catholique de Louvain) *Life expectancy, income and long term care: the Preston Curve reexaminated*
13:00 – 14:30	**Lunch**
14:30 – 16:30	ENVIRONMENTAL POLICY **CHAIR: Georges CASAMATTA** (University of Corsica) **Rick VAN DER PLOEG** (University of Oxford) *A just green transition: carbon pricing, income taxation, and citizen dividends* **Felix BIERBRAUER** (University of Cologne) *On the desirability of a market-based approach to climate policy* **Robin BOADWAY** (Queen's University) and Katherine CUFF (McMaster University) *Global warming policy in a federation: federal vs. regional roles*
20:00	**Dinner** *(upon invitation)*

Friday, May 24, 2024

09:30 – 10:50	PUBLIC FINANCE 1 **CHAIR: Pierre PESTIEAU** (University of Liège) **Bas JACOBS** (Vrije University Amsterdam) *Should we tax capital income or wealth?* **Alain TRANNOY** (University of Aix-Marseille) *Why should we tax public land?*
10:50 – 11:10	Coffee break
11:10 – 12:30	PUBLIC FINANCE 2 **CHAIR: David BARDEY** (Universidad de Los Andes) **Jean-Charles ROCHET** (TSE) *A general solution to the multidimentional screening problem* **Pierre BOYER** (Ecole Polytechnique) *The taxation of couples*
12:30 – 14:00	Lunch
14:00 – 15:20	PUBLIC FINANCE 3 **CHAIR: Francesca CARTA** (Bank of Italy) **Antonio RUSSO** (University of Sheffield) *Transaction taxes and second-degree price discrimination* **Luca MICHELETTO** (Università degli Studi di Milano) and Firouz GAHVARI (University of Illinois Urbana Champaign) *Goofing off at work and optimal income taxation*