



Toulouse
School of
Economics

SCOR
FONDATION POUR LA SCIENCE

SCOR Chair Market Risk and Value Creation Activity report 2021

Economics for the common good

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SCIENTIFIC TEAM

Head of the Chair: Christian Gollier, *TSE*

Co- Head of the Chair: Stéphane Villeneuve, *TSE*

Scientific Council

- M. André Lévy-Lang, Chairman, *SCOR Risk Foundation*
- M. Yassine Lefouili, Director, *TSE-Partnership*
- M. Philippe Trainar, Director, *SCOR Foundation*
- M. Elyès Jouini, Scientific Directory President, *Institut Louis Bachelier*
- M. Louis Eeckhoudt, Professor, *School of Management Lille IESEG*
- M. Xavier Freixas, Professor, *Pompeu Fabra University Barcelona*

INTRODUCTION

Since 2008, the SCOR “Risk Markets and Value Creation” Chair has supported theoretical and applied research at TSE on regulation of insurance markets and risk management, combining methods from financial economics, industrial organization and econometrics.

SCOR teams are in constant contact with TSE researchers. At regular intervals and minimum once a year, a steering committee meeting allows researchers to present their results, and SCOR representatives to express their research needs. It also determines the orientation of applied research to meet the needs of SCOR management.

The primary role of the TSE economists is to help SCOR understand how risk transforms and influences economic decision-making hence contributing to the long-term strategy of the enterprise.

The Chair has been renewed in 2020 and the relations between the Toulouse researchers and the SCOR teams have led to new research themes that we recall below.

A. Behavioral Economics

1. Incentive and ethics by Jean Tirole

This research project addresses the question: Do markets encourage unethical behaviors? Of particular interest will be « the replacement excuse », the fact that if a supplier refuses to engage in unethical trades, someone else will. Examples abound from bribing by business executives or officials to win a contract to professional athletes taking illicit drugs to defeat their competitors. This logic receives much support in experimental work. On the other hand, recent theoretical work by Dufwenberg et al (2011) has identified the conditions under which an economy whose agents have ethical preferences provides the same allocation as if these agents were perfectly selfish: perfectly competitive markets completely destroy any desire to do good and thus the replacement logic implies that an observer cannot distinguish between selfish agents and agents with other-regarding preferences. The main goal of this project is to study how competition impacts ethical behavior when these conditions are not met, that is when the suppliers differ in their ethical concerns. More generally, our study of ethics in markets only begins to analyze the general issue of the morality of markets, raised in the 18th century and very prominent in the political discourse since the financial crisis and the backlash against globalization. More broadly, the unifying theme of our analysis is the relationship between ethical behavior and the power of incentives. The market is only a specific system of incentives. Within organizations, different ways of incentivizing managers and workers may lead to different ethics.

2. Behavioral insurance economics by Nicolas Treich

Behavioral economics attempts to take the best from two disciplines, namely the rigor and normative approach from economics combined with more realism about individual choices from psychology (and other social sciences such as sociology). Three behavioral “deviations” from the classical homo-economicus paradigm have been typically

explored in behavioral economics: bounded rationality, imperfect self-control and other-regarding preferences. The general objective of the research project would be to explore both theoretically and empirically the application of behavioral economics to insurance demand. Indeed, the domain of insurance a priori provides a rich domain for this inquiry, in particular because it involves decision under risk and uncertainty, long term effects, complex contracts and choices that are strategic and that concern others. Moreover, recent empirical research has identified many puzzles with classical economic theories of insurance demand, 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 like Covid 19 pandemic, preference for dominated choices in the health domain (Bhargava et al. 2017, Handel and Kolstad 2015), or inconsistent choices across different insurance domains (Barseghyan et al. 2011). These studies emphasize the possible role of probability misperceptions, availability heuristics, education, financial numeracy and complexity. We note also that recent research has emphasized the role of regret in risky decisions that may affect some insurance decisions. Further, we stress the possible emotional or psychological reaction to dramatic events such as death or severe accidents that may play a role to explain life insurance or annuity demand for instance. Finally, further research may also specifically consider the role of inter temporal inconsistency, confirmatory bias and the latest behavioral models of strategic ignorance, motivated reasoning and social norms (see e.g. Benabou and Tirole 2016) in the context of insurance decisions.

B. Green Challenges for Long-term Investments

1. The cost-efficient carbon pricing puzzle by Christian Gollier

The energy transition will be costly. A myriad of investments will have to be done in a very uncertain environment. In particular, there is much uncertainty about when and which technologies will emerge in the future to cope with climate change. Green investments would be boosted if the path of carbon prices could be established for the remainder of the century. But such a price commitment is incompatible with the necessity to satisfy the objective of 2°C when the future technologies to reach this aim yield marginal abatement costs that are unknown today. The goal of this project is to characterize the risk profile of green investments and of efficient carbon prices (“carbon beta”), together with the optimal portfolio strategy of investors. We are also interested in characterizing the link that exists between an asset’s beta and the characteristics (income/price elasticity of demand/supply) of the market in which the corresponding firm operates, with a particular focus on long-term horizons. We are also working on a research project about the welfare cost of ignoring the betas for capital budgeting.

2. Decarbonizing Portfolios by Jean-Paul Décamps et Stéphane Villeneuve

Modern Portfolio optimization can be defined as the maximization of the return for a particular level of risk. Driven by recent regulatory obligations of institutional investors, sustainability has become very critical in assessing the couple return/risk. In particular,

the decarbonization of portfolios is taking on an increasingly important role in asset management. And it goes far beyond adding an additional selection criterion, because both institutional investors and the managers who serve them are now convinced that the fight against global warming is "disruptive". It will lead investment specialists to re-view their investment horizon, to integrate the transition risk and therefore no longer give priority to the portfolio management learned in the MBA courses. A clear motivation for adopting ESG criteria is the risk of a portfolio being penalized by new regulations or a high-profile scandal involving an issuer. TSE researchers propose to consider a rationalization of portfolio allocation that takes these new risks into account by proposing a Merton-like model compatible with ESG criteria that adds a third dimension to the risk/return trade-off related to ESG criteria and takes into account the uncertainty about a change in regulation. The idea is to quantify the risk premium associated with the uncertainty associated with this third dimension. This will be done through a modification of the standard portfolio allocation model by incorporating a robust metric to assess both the carbon impact of the portfolio and the regulation risk.

3. Incentive pay in the face of economic shutdown by Stéphane Villeneuve

The first few months of 2020 will go down in world history as a period of time during which production stopped as hospitals and the medical world struggled to get a grasp on the Sars-Cov-2 pandemic. As we begin to come to terms with the current pandemic risk related turmoil, the focus is turning to building the world of tomorrow with the idea that we must learn to live with such risks. This raises many questions, including standard micro-economic questions with one related to contract theory: is there a way of tuning employment contracts (and thus incentives) in order to account for the possibility of such an externally caused halt occurring, in particular when work relationships suffer from an internal moral-hazard problem?

C. Health Economics and Aging

1. Longevity, dependence and bequests by Pierre Pestieau and Emmanuel Thibault

The goal of this project is to study the design of an optimal tax transfer policy in a world in which individuals differ in their risks of both mortality and dependence and in which the government cannot distinguish between the bequests motives but observes their timing. The policy consists of a pension scheme, a LTC social insurance, a payroll tax and an inheritance tax. As it will appear, the optimal solution is going to depend on the social welfare criterion adopted. We plan to use two polar criteria: a utilitarian utility function and the equalization of ex post lifetime utilities. We want to study the interaction between longevity, dependence and bequest in an overlapping generations model when those three variables are endogenous. Both dependence and longevity depend on genetic and environmental factors but also on individual choices such as health care and living habits. Bequests are both accidental and altruistic. After a positive analysis we

turn to the possibility of using policy tools to maximize the generational steady state utility.

2. Protect yourself by buying insurance for your parents by Helmuth Cremer and Catarina Goulao

The goal of this project is to study individual choices of informal care and private insurance. The most original feature of our approach is that children may buy private long-term care (LTC) insurance for their parents. Another specific feature is that there is some social norm which enables parents to impose a certain level of informal care on their children. In addition, there is two sided but imperfect altruism. Because the parents underestimate the cost informal care imposes on their children, and because of imperfect altruism, the laissez faire (LF) typically differs from the (utilitarian) first best (FB). We want to show that the FB can be decentralized through a subsidy on labor (which increases the opportunity cost informal care and is effectively equivalent to a tax on informal care). In a second-best (SB) world, we want to examine how other instruments, like a subsidy of private insurance, ought to be used.

3. Diets across life-courses by Helmuth Cremer, Catarina Goulao and Jean-Marie Lozachmeur

The goal of this project is to analyze the determinants and health impacts of dietary transitions and the evolution of nutrition-related-consumption behaviors. The originality and importance of our approach consists in focusing on the dynamics of diets over consumers' life-courses, on the determinants of nutrition-related-consumption behaviors and on their long-term health impacts. Even if seldom used in social sciences, we believe such long-term approach to be relevant in determining the optimal design of policy instruments, such as taxes, capable of promoting and supporting a healthy diet in the long-term, which in turn would positively affect population health. A different use of recently available data allows us to take this long-term approach.

4. Spending down assets for LTC social assistance by Pierre Pestieau and Jean-Marie Lozachmeur

The process of reducing the value of assets to qualify for Medicaid or any other LTC means tested social assistance is referred to as « spending down ». One way to reduce the value of one's assets is to spend them on long term care till they reach a level low enough to qualify for the program. Another way consists into transferring the assets to one's children. The goal of this project is to analyze the process of spending down triggered by bequest motives. It will be both theoretical and empirical (based on HRS).

5. Asymmetric information, strategic transfers and the design of LTC policies by Helmuth Cremer and Pierre Pestieau

The goal of this project is to study the design of social LTC insurance when informal care is exchange based. Parents do not observe their children's altruism (represented by a parameter affecting their cost of providing care) but can commit to a rule specifying transfers conditional on the level of informal care. Social LTC insurance is designed to maximize a weighted sum of parents' and children's utility. Intuitively, the optimal uniform public LTC insurance can ensure the risk of dependency but when children's utility matters parents are not fully insured. We want to show that a non-uniform policy conditioning LTC benefits on bequests can provide full insurance even for the risk of having children with a low degree of altruism. Under the optimal public policy, we anticipate that informal care always increases in the children's welfare weight, irrespective of the parents' degree of risk aversion. Finally, we want to complete our theoretical analysis by numerical solutions based on a calibrated example.

6. Long-term and health hazard by Helmuth Cremer, Pierre Pestieau and Emmanuel Thibault

The still ongoing pandemic is going to impact our view of long-term care in two different ways. First, it is going to lead to a total rethinking of the architecture and the management of nursing homes. The way nursing homes are organized in countries such as France and in Belgium seem to be responsible for the huge death toll observed among their residents. Second, the high risk incurred by the residents of nursing homes will surely influence parents and children when they have to choose the living arrangement of the dependent. It is likely that staying home instead of going to a nursing home or living with one's children will gain more attractiveness. SHARE is conducting a study of these issues, particularly the effect of living arrangements on the health and welfare of the dependent elderly. We should be able to use this forthcoming evidence.

SUMMARY OF THE ACTIVITIES FUNDED BY THE CHAIR

A. Workshops and meetings involving TSE researchers and SCOR Team

- **January 15, 2021:** Online Meeting with Aisling Bradfield (SCOR Ireland) 11.00 – 12.00
- **April 15, 2021:** Online Workshop on Behavioral Insurance Economics 13.30 – 17.00
- **July 28, 2021:** Online Meeting on Robo-advising 16.00 – 17.00
- **October 07, 2021:** Online Meeting on nudges, rule of thumb 16.00 – 17.00

B. Conferences scheduled by the Chair for 2022

- **January 28, 2022:** SCOR-TSE Workshop on Long-term Care and Aging 14.00-18.00
- **Fall 2022:** Annual Conference

C. Published works and presentations

1. Published works

Linqun Liu, and Nicolas Treich, “Optimality of Winner-Take-All Contests: The Role of Attitudes toward Risk”, *Journal of Risk and Uncertainty*, October 2021.

Andrea Attar, Thomas Mariotti, and François Salanié, “Entry-Proofness and Discriminatory Pricing under Adverse Selection”, *American Economic Review*, vol. 111, n. 8, pp. 2623–2659, August 2021, .

Helmuth Cremer, Justina Klimaviciute, and Pierre Pestieau, “A political economy of loose means-testing in targeted social programs”, *Economics Letters*, vol. 202, n. 109810, May 2021.

Helmuth Cremer, and Chiara Canta, “Opting out and topping up reconsidered: Informal care under uncertain altruism”, *Canadian Journal of Economics*, Toronto, vol. 54, n. 1, pp. 259–283, February 2021, .

Helmuth Cremer, Jean-Marie Lozachmeur, and Kerstin Roeder, “Household bargaining, spouses’ consumption patterns and the design of commodity taxes”, *Oxford Economic Papers*, vol. 73, n. 1, pp. 225–247, January 2021.

Matthew Adler, Maddalena Ferranna, James K. Hammitt, and Nicolas Treich, “Fair In-nings? The Utilitarian and Prioritarian Value of Risk Reduction over a Whole Lifetime”, *Journal of Health Economics*, vol. 75, n. 102412, January 2021.

Marie-Louise Leroux, Pierre Pestieau, and Grégory Ponthière, “Fare Long-Term Care Insurance”, *Social Choice and Welfare*, vol. 57, n. 1, pp. 503–533, 2021.

2. Presentations

- **Christian Gollier** on the project “The cost-efficiency carbon pricing puzzle “
- Joint seminar the Potsdam Institut for Climate Impact Research (PIK) and the Mercator Institute on Global commons and Climate Change (MCC), Berlin’s Humboldt University (HU), January 25, 2021
- Conference on “Climate finance and economics workshop”, University of Sussex, March 12, 2021

- Seminar, HEC Paris, June 10, 2021
- Seminar on climate policy, CEPR/EAERE webinar series, September 2021
- **Stéphane Villeneuve** on the project "Incentive pay in the face of shutdown"
- IFIN Seminar, University of Lugano, May 2021
- Seminar on insurance mathematics and stochastic Finance, University of Zurich, May 2021
- **Helmuth Cremer** on the project "Household bargaining, spouses' consumption patterns and the design of commodity taxes"
- Seminar on the 20th journées Louis-André Gérard-Varet, LAGV, University of Marseille, June 2021

D. 2021 SCOR Prizes

During the 47th annual seminar of the European Group of Risk and Insurance Economists, the prize "SCOR-EGRIE 2021 for the best paper written by a young economist" was awarded to Julia Holzapfel (LMU) for her paper « Classification Risk in health insurance: The interaction of prevention and guaranteed renewable insurance », which shows that Guaranteed Renewable contracts which reward investments in prevention but do not use genetic information in pricing can be a good compromise to offer classification risk insurance at an attractive price without disadvantaging individuals with an unfortunate genetic endowment.

The jury was chaired by Michael Hanselmann, Ludwig-Maximilians University Munich, executive secretary of EGRIE.

The SCOR-EGRIE prize for 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 SCOR-EGRIE Committee is composed of 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 EGRIE seminar, another prize, sponsored by the Risk Markets and Value Creation Chair (which brings together SCOR, TSE-P, Risk Foundation and Paris Dauphine), is also awarded: the SCOR-Geneva Risk and Insurance Review Award Best Paper Award for the best paper in the journal Geneva Risk and Insurance Review. In 2021, the prize was awarded to Christian Gollier (TSE).

E. TSE-SCOR Foundation for Science Journals

One of the 2021 outputs of the Chair is a new “Journal. It highlights articles from TSE researchers or, in some cases, researchers from other 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.

In 2021, two journals were edited in March and in October. The next issue of the Journal will be out shortly.

March

https://www.tse-fr.eu/sites/default/files/TSE/documents/CenterFinance/Cahiers/journal_tse-scor-2021.pdf

October

https://www.tse-fr.eu/sites/default/files/TSE/documents/CenterFinance/Cahiers/journal_tse-scor-oct.2021.pdf



Journals are also disseminated on TSE’s social networks and on the TSE website dedicated to the Chair. This website is updated regularly. The support team at TSE has been in touch with Mme Peuillet to ensure the Journals are also accessible on the SCOR Foundation’s website.

APPENDIX

Workshop on Behavioral insurance Economics, April 15, 2021

Workshop on Long-Term Care and Aging, January 28, 2022

Workshop on Behavioral Insurance Economics

Toulouse, Thursday, April 15, 2021

ONLINE WORKSHOP

Toulouse School of Economics (TSE)

CONFERENCE SECRETARIAT

Valérie Placier

scor-events@tse-fr.eu



THURSDAY, APRIL 15

- 13:30 – 13:45:** **Introduction** by Stéphane Villeneuve (*TSE*), and Nicolas Treich (*TSE, INRAE*)
- 13:45 – 14:15:** **Nicolas Treich** (*TSE, INRAE*)
"Behavioral insurance demand: An overview"
- 14:15 – 14:45:** **Olivier Armantier** (*FED NY*)
"Insurance and financial decisions: A puzzle"
- 14:45 – 15:15:** **Philippe De Donder** (*TSE, CNRS*)
"State-dependent preferences and probability misperceptions in LTC insurance"
- 15:15 – 15:30:** **Break**
- 15:30 – 16:00:** **Astrid Hopfensitz** (*TSE, IAST*)
"Insurance in the household: An experiment on individual risk, household risk and intra-household inequality"
- 16:00 – 16:30:** **Francesca De Petrillo** (*IAST*)
"Evolution of decision making under risk: how comparative work on human and non-human primates can shed light on humans' decisions"
- 16:30 – 17:00:** **Milo Bianchi** (*TSE, TSM*)
"Robo-advising for small investors"

Workshop on Long Term Care and Aging



Friday, January 28th 2022

UTC +01 : 00

ONLINE WORKSHOP

Toulouse School of Economics (TSE)

CONFERENCE SECRETARIAT

Florence Chauvet & Valérie Placier

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FRIDAY, JANUARY 28

- 14:00 – 14.10** **Introduction** by Philippe Trainar (*SCOR*) & Stéphane Villeneuve (*TSE*)
- 14.15 – 14.45** **Pierre Pestieau** (*University of Liège*)
“The economics of long-term care: an overview of recent research”
- 14.50 – 15.20** **Holger Strulik** (*University of Goettingen*), Johannes Schünemann
(*University of Fribourg*) and Timo Trimborn (*University of Aarhus*)
“Optimal demand for medical and *long-term care*”
- 15.25 – 15.55** **Mathieu Lefebvre** (*Aix Marseille School of Economics*), Xavier Flawinne
(*University of Liège*), Sergio Perelman (*University of Liège*), Pierre
Pestieau (*University of Liège*) and Jérôme Schoenmaeckers (*University of
Liège*)
“Nursing homes and mortality in Europe: uncertain causality”
- 16.00 – 16.15** **Break**
- 16.20 – 16.50** **Tatyana Koreshkova**(*Concordia University*) and Minjoon Lee
(*University of Carleton*)
“Long-term care choice in equilibrium: Implications for public policies”
- 16.55 – 17.25** **Chiara Canta** (*Toulouse Business School*) and Helmuth Cremer (*TSE*)
“Family bargaining and the gender gap in informal care”
- 17.30 – 18.00** **Jean-Marie Lozachmeur** (*TSE*), Francesca Barigozzi (*University of
Bologna*) and Helmuth Cremer (*TSE*)
“Gender wage and longevity gaps and the design of retirement systems”