

## **PUBLICATIONS:** stories...

---

My first two papers were written with **Alexis Jacquemin** following my *Master Thesis* defended in June 1973. The reader was Alain Bensoussan. The main results were summarized in "Uncertain demand and advertising expenditures of the firm", Working Paper 7314, *Institut des sciences économiques*, revised in May 1974.

"Un modèle dynamique des dépenses optimales de publicité en situation d'incertitude", *Revue Economique*, 1974.

It had appeared as *Publication de Recherche 73-33* of the *Institut Européen de Recherches et d'Etudes Supérieures en Management* (August 1973).

"A note on advertising policy under uncertainty and dynamic conditions", *Journal of Industrial Economics*, 1975 (*CORE Reprint 230*).

The latter is a paper that first appeared as *CORE Discussion Paper 7344* (December 1973).

---

"The value of environmental quality", *Umwelt alloktion in raum*, H. Siebert (ed.), Peter Lang Verlag, Mannheim, 1981.

That paper came out from my work as a research assistant (1973-74) of **Henry Tulkens** within the project "*Analyse économique de la lutte contre la pollution des eaux*", Programme national sur l'environnement physique et biologique. The report was entitled "Analyse théorique et méthodes de mesure des avantages collectifs de la qualité de l'eau d'une rivière" (August 1974).

During that period, I read and used a paper by Agnar Sandmo "Public goods and the technology of consumption" (*Review of Economic Studies* 40, 1973) in which I found an error in the generalized formulation, more precisely in equation (36). The correction of that error was opening interesting extensions. Henry and I then proposed to Agnar to write a joint paper. He, however, preferred to publish a correction that appeared in 1975. Too bad... The point was taken up later (although shortly) by A. Zabalza in a comment that appeared in 1977.

---

I started my Phd period in October 1975 with the project of studying stochastic sequences of temporary equilibria. Ambitious! And quickly abandoned. It was the period where general equilibrium with price rigidities was flourishing, as the [memo](#) sent by Jacques Drèze in January 1976 shows, following the publication of Edmond Malinvaud's monograph "The theory of unemployment revisited".

The following two papers were written with **Jean Gabszewicz**. The first one was presented at the CNRS conference "*Systèmes dynamiques et modèles économiques*" in Luminy (Marseille), in July 1976.

"Saving behaviour and disequilibrium analysis", *Systèmes dynamiques et modèles économiques*, CNRS, Paris 1977 (*CORE Reprint 313*).

The second one has first appeared as *CORE Discussion Paper 7701* (January 1977).

"On disequilibrium savings and public consumption", *Zeitschrift für Nationalökonomie*, 1979 (*CORE Reprint 367*).

The next two papers completed the *Doctoral Dissertation* that I have defended in October 1980. The jury included **Werner Hildenbrand** and **Jacques Drèze** (as co-supervisors), Jean Gabszewicz, Martin Hellwig and Albert Kervyn (my favorite macro teacher), with Henry Tulkens as chair.

"Employment and dividend policy of the firm under risk", *Review of Economic Studies*, 1980 (*CORE Reprint 397*).

"Stationary Keynesian equilibria", *European Economic Review*, 1982, (*CORE Reprint 488*).

These two papers first appeared as Discussion Paper 36 and 54 at the University of Bonn (dated July 1978 and April 1980) as part of the *Sonderforschungsbereich 21, Projektgruppe "Theoretische Modelle"* that financed my stay in Bonn (I had initially received a scholarship from the DAAD to support my first visit to Bonn in 1976-77). My doctoral dissertation included a survey:

"Apports de la théorie de l'équilibre général temporaire en analyse macroéconomique", *Recherches Economiques de Louvain*, 1981 (*CORE Reprint 441*).

During that time, I was "aspirant" at the *Belgian Science Foundation (FNRS)* for 4 years (1975-79). An additional year was financed under another FNRS contract under the responsibility of Jacques Drèze (1979-81).

---

The following paper, published twice, is the result of a joint work with **Jacques Drèze**, that started shortly after I had obtained my Doctoral Degree. The first version appeared as *CORE Discussion Paper 8223*.

"State-dependent utility, the demand for insurance and the value of safety", *The value of life and safety*, M.J. Lee (ed.), North Holland, Amsterdam, 1982.

"State-dependent utility, the demand for insurance and the value of safety", *Premium calculations in insurance*, F. de Vylder (ed.), D. Reidel, 1984 (*CORE Reprint 560*).

The following two papers are by-products of my joint work with Jacques Drèze on increasing returns in general equilibrium, a long-lasting endeavor that dates back to the time I was visiting the University of Illinois in Urbana-Champaign in 1981-82.

"On supply-constrained equilibria", *Journal of Economic Theory*, 1984 (*CORE Reprint 576*).

It appeared first as *CORE Discussion Paper 8249* (November 1982).

"Rigidité des prix relatifs, rationnement de l'offre et inflation", *Cahier du séminaire d'économétrie*, 1984, 13-23 (*CORE Reprint 583*).

Papers on increasing returns came out later. They were all published in *JME*, "1<sup>st</sup> class burying place" as I used to name it. The first is one of the best papers I have been involved with. It had initially been submitted to *Econometrica* and was eventually rejected by the editor David Kreps on what I consider to be shaky grounds: "[the] *notion of equilibrium is a generalization standard Walrasian equilibrium ... is an axiomatic one ... not derived from an extensive form game*"! We actually received only one referee report and it was positive. Our guess is that it was written by Herbert Scarf. At the end of his letter, Kreps wrote: "*In papers of this sort, that break new ground in the fundamental notions we employ, there is always the (uncomfortable) possibility that those that are negative are blinded by their prejudices and preconceptions.*" The complete letter is available [here](#). This rejection had deep consequences on my motivation. It is at that time that I became involved more and more in university management, first in Florence (EUI) and later in Louvain (UCL).

"Competitive equilibria with quantity-taking firms and increasing returns", *Journal of Mathematical Economics*, 1988 (CORE Reprint 819).

"Distributive production sets and equilibria with increasing returns to scale", *Journal of Mathematical Economics*, 1988 (CORE Reprint 818).

They had first appeared as CORE Discussion Paper 8623 and 8701, and EUI Working Paper 86/243 and 87/268 . They are included in a survey:

"Rendements d'échelle croissants et équilibre général", *Revue d'économie politique*, 1988.

The last paper in that series is the result of our long-lasting effort. It was written with **Tatsuro Suzuki**, and appeared as *CORE Discussion Paper 2002/78*.

"Imperfect competition à la Negishi, also with fixed costs", *Journal of Mathematical Economics*, 2003 (CORE Reprint 1623).

At the end of the 90s, I started to work with **Xavier Calsamiglia** from the Universitat Pompeu Fabra (Barcelona) on a joint paper entitled "Competitive pricing, free entry and increasing returns in a general equilibrium framework". Unfortunately, it remained unfinished. Too bad. Maybe one day, who knows?

---

The following papers were written with **Jean-Paul Fitoussi** while he was at EUI in Florence (1983-84) and later at OFCE in Paris.

"Wage indexation and macroeconomic fluctuations", *Wage rigidity, employment and economic policy*, W. Beckerman (ed.), Duckworth, London, 1986.

It first appeared as *EUI Working Paper 85/195* and was eventually published in French:

"Indexation des salaires et fluctuations macroéconomiques", *Revue d'économie politique*, 1986.

and later revised:

"Equilibre de stagflation et indexation des salaires", *Macro-dynamique et déséquilibres*, J.-P. Fitoussi et P.A. Muet (eds.), Economica, Paris, 1987.

Survival in a general equilibrium context was a question raised by Georgescu-Roegen. It underlies the following two papers:

"Revenu minimum, allocations de chômage et subventions à l'emploi",  
*Revue économique*, 1996.

"Revenu minimum, niveaux de qualification et échelle de salaires",  
*Cahiers Luxembourgeois d'économie* XII, 1997.

That last paper first appeared in English as *OFCE Document de travail* 96-03 (June 1996).

---

"Monopolistic equilibria and involuntary unemployment", *Journal of Economic Theory*, 1985.

That paper came out as a *EUI Discussion Paper* 84/118 after a fight with my "dear colleague" Mario Nuti who finally said "*I have no objection to having this as a working paper if and only if we can all publish as working paper whatever we fancy.*" It is actually just a short note directly linked to a paper by Claude d'Aspremont and Rodolphe Dos Santos. Whatever Nuti thought, it happens to be my most cited paper, despite the fact that it is indeed a minor contribution!...

---

I left EUI at the end of 1989, got a position at *Erasmus University Rotterdam* in 1991 where I remained only one year. I indeed got a position at UCLouvain in 1992, with an office at the *Institut de recherches économiques et sociales* (IRES). The nineties were not very fruitful years in terms of research, just a joint paper written with **David de la Croix** et **Eric Toulemonde**,

"Efficient bargaining and labor under-utilization", *Journal of Economics*  
(ex *Zeitschrift für National-ökonomie*), 1999.

where my contribution was of a rather technical nature.

I served as chair of the economics department from 1994 to 2000 and later, from 2001 to 2004 as prorektor in charge of humanities and social sciences.

---

**Omar Licandro** and I have conducted the interview of Jacques Drèze for *Macroeconomic Dynamics*. Not as simple as an interview... After a lot of editing, the final text came out:

"From uncertainty to macroeconomics and back: An interview of Jacques Drèze",  
*Macro-economics Dynamics*, 2005 (*CORE Reprint* 1770).

It was reprinted in "*Inside the economist's mind*", Samuelson P.A. and W.A. Barnett (eds.), Blackwell Publishing, 2006.

I eventually wrote a note highlighting Jacques Drèze's contribution to incomplete markets. It started to circulate in 2006.

"Incomplete market economies. The seminal work by Diamond, Drèze and Radner",  
*CORE Discussion Paper* 2012-29.

I circulate it largely in the hope that the trio be considered for a Nobel. In vain. When Diamond got the prize, I kept hoping that the duo Drèze-Radner would eventually receive it. They both left us in the meantime.

---

After I left university management at the end of 2004, I moved from IRES to CORE (a return that faced some fierce opposition from IRES side...). As general equilibrium theory was receiving less and less attention and support, I eventually moved to a different research domain, *cooperative game theory*. It took some time before papers came out.

The first paper appeared as *CORE Discussion Paper* 2006/115 "Fixed costs and the axiomatization of Shapley's sharing rule". It was then revised in *CORE Discussion Paper* 2009/35 and eventually published in *IGTR*, two years later. I dedicated it to Lloyd Shapley, as a modest tribute to a great mind.

"Allocation of fixed costs: characterization of the (dual) weighted Shapley value",  
*International Game Theory Review* 13, 2011 (*CORE Reprint* 2405).

I had written a paper, "Shapley compensation scheme" (*CORE Discussion Paper* 2007-94), that was read by Alexandre Bailly who was working for a private firm (TRASYS not to name it...) on the data and cost sharing problem faced by the European chemical industry within the EU program REACH. I helped that firm to build a software able to deal with this complex compensation problem. A contract was signed, a contract that was actually never honored! All this gave rise to a joint and enlarged paper written with **Daniela Tellone** that appeared later as *CORE Discussion Paper* 2008/10. Its publication took some time...

"Data games: sharing public goods with exclusion", *Journal of Public Economic Theory*, 2013 (*CORE Reprint* 2481).

The next paper is a by-product of the first version of the data games paper:

"Cooperative provision of indivisible public goods", *Theory and Decision*, 2013  
(*CORE Reprint* 2454).

---

In 2008, while I was visiting the University of Nancy (now *Université de Lorraine*), I started to work with **Samuel Ferey** on "*Law and Economics*" questions. Our joint research effort eventually produced a first paper based on Samuel's idea to use the Shapley value to treat liability situations and the associated problem of causality:

"How to share joint liability: a cooperative game approach", *CORE Discussion Paper*  
2012-23

It quickly appeared in *Mathematical Social Sciences*, 2013 (*CORE Reprint* 2473).

That version was directed to readers familiar with cooperative games. We then considered more deeply the question of causality and liability, in a law and economics perspective. It gave rise to two joint papers:

"Multiple causation, apportionment and the Shapley value",  
*Journal of Legal Studies* 45, 2016 (CORE Reprint 2756).

"Overdetermined causation cases, contribution and the Shapley value",  
*Chicago-Kent Law Review* 91, 2016.

Another paper in a law and economics perspective concerns patent licensing (CORE Discussion Paper 2013-12). It is the result of a joint work with **Sophie Poukens**:

"The Shapley value as a guide to FRAND licensing agreements",  
*Review of Law and Economics*, 2014 (CORE Reprint 2645).

---

I am currently working on a book dedicated to Shapley's contributions to transferable utility games, essentially the core, the least-core, convex games and, of course, the value. It covers the theory (in a self-contained way) and some applications. A time-consuming endeavor!

While working on it, I became interested in Harsanyi's idea of coalitions' dividends. In view of the dispersed literature on that topic, I eventually decided to write a survey paper (available as CORE Discussion Paper 2015-40):

"On Harsanyi dividends and asymmetric values", *International Game Theory Review*,  
2017 (CORE Reprint 2902).

I also became interested in the concept of 1-convex cooperative game introduced by Theo Driessen back in the 80s. It appears that it defines an interesting class of games whose cores are regular simplices. I eventually wrote a paper collecting and extending the properties of 1-convex games and their cores, meant to be a tribute Théo Driessen:

"1-convex transferable utility games, a reappraisal" (CORE Discussion Paper 2021-16).

It was eventually published in the *Journal of Mathematics and Statistical Science* in 2024.

---

I have had many occasions to talk with **Victor Ginsburgh** (member of ECARES - University of Brussels – and member of CORE) on the Shapley value and its applications. In 2012, together with Israel Zang, he had written a paper on ranking wines using the Shapley value to define the so-called Shapley ranking, a form of uniform fractional voting. Victor and I then wrote a paper providing an axiomatic foundation to Shapley ranking and analyzing it as a social welfare function, in comparison to approval ranking.

"Approval voting and Shapley ranking", *Public Choice*, 2020.

It is available as CORE Discussion Paper 2018-12 and CORE Reprint 3073. A proposal for a reform of the voting modalities in Belgium has been the occasion of applying Shapley ranking:

"À propos de la proposition du ministre Koen Geens de donner cinq voix à chaque électeur"  
*Regards économiques*, 2019.

It is available as CORE Reprint 3117.

**Irinel Dragan** is a mathematician from the University of Texas (Arlington) who had been a CORE visitor back in 1970. We have been in touch regularly since I started to write papers on cooperative game and we eventually wrote a joint paper on the inverse of the Shapley value (one of his favorite topic):

"Alternative representation of semivalues, the inverse problem and coalitional rationality", *Journal of Mathematics and Statistical Science* 6, 2020.

It is available as *CORE Discussion Paper* 2019-10 and *CORE Reprint* 3078.

---

The paper "Sharing a collective probability of success" applies the Shapley value to allocate the probability of success resulting from the joint action of a group of players. It came out first as *CORE Discussion Paper* 2020-35.

"Sharing a collective probability of success", *Mathematical Social Sciences* 123, 2023.

A companion paper "Dividing the expected payoff resulting from joint actions" is available as *CORE Discussion Paper* 2023-17.

The paper "Cooperative product games" investigates a class of games where players are defined by weights and whose characteristic function is the product of weights. It is available as *CORE Discussion Paper* 2023-10.

"Cooperative product games", *International Game Theory Review* 26, 2024.

---

In 2024, I have started a collaboration with **Eustache Mégribêto** from the University of Antwerp with a paper entitled "Measuring the extent of synergies among innovation actors and their contributions: the Helix as a cooperative game". There, we extend existing work to any number actors and provide clear and complete game theoretic results. It is available as *CORE Discussion Paper* 2024-06. I have also extended my collaboration with **Samuel Ferey**, with a paper entitled "Leniency in antitrust investigations as a cooperative game". There, we consider firms that are part of a cartel and we use the Shapley value for assessing their share in the total damage. It is available as *CORE Discussion Paper* 2024-08.

---

In 2017, the French publishing house *Economica* has published an introduction to game theory, "*Conflit, négociation, partage et pouvoir*", resulting from my teaching experience with bachelor students in Louvain-la-Neuve, not only in economics but also in political science and sociology.

**Pier Mario Pacini** (former student at EUI-Florence, now professor at the University of Pisa) has since translated the text into Italian and actually improved it greatly. He went beyond correcting many minor mistakes (and some major ones as well...). It has since been published by *Giappichelli*.

An English translation, improved and completed, is now available at Springer under the title "*Game theory for the social sciences. Conflict, bargaining, cooperation and power*".

**Thanks to my co-authors** (chronologically)

Alexis Jacquemin

Jean Gabszewicz

Jacques Drèze

Jean-Paul Fitoussi

David de la Croix

Eric Toulemonde

Xavier Calsamiglia

Takashi Suzuki

Daniela Tellone

Samuel Ferey

Sophie Poukens

Irinel Dragan

Victor Ginsburgh

Pier Mario Pacini

Eustache Mègnigbèto

[Back](#) to the home page.