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# Introduction to the Special Issue in Honor of Professor Emilio Pagoulatos

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## Abstract:

To commemorate and recognize four decades of research, teaching and mentoring by Professor Emilio Pagoulatos, we compiled a volume of articles in his honor. His legacy spans four U.S. universities and a second generation of scholars. This volume contains a sample of the extensive work he co-authored or influenced in the area of agricultural and food industrial organization.

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## About Emilio Pagoulatos

Emilio Pagoulatos was born on the island of Kefalonia (Greece), in 1943, in the midst of the Second World War, to a Greek father and an Italian mother. His family soon left the island for Athens, where his brother Angelos (who became a professor at the University of Kentucky) and sister Elena were born. This Greek-Italian background and the strong solidarity among the siblings in the face of shared hardships left a deep imprint on Emilio's personality and fundamental beliefs.

Emilio became an economist by accident. He wished to become an architect but his father changed his path by obliging him to study Economics instead. He enrolled at the Sapienza University of Rome, where he obtained both his undergraduate degree and, in 1967, a doctoral degree in Economics. He then went on to get a Ph.D. in Agricultural Economics at Iowa State University, from which he graduated in 1973, after serving as an instructor and research assistant.

Emilio's professional career spans four U.S. universities. He started at the University of St Louis-Missouri, where he became Associate Professor in 1977 and where he met and married Jan, who has accompanied him and has offered firm support through every stage of his extensive career. Two years later they moved first to the University of Florida, where he became full Professor in 1982, and then to the University of Nebraska, in 1984. In 1987, Emilio was hired as Professor and Head of the Department of Agricultural and Resource Economics at the University of Connecticut. After retiring in 2007, they moved to St Louis, thus circling back to the starting point of his professional life.

## About Emilio's Legacy

Emilio has left a legacy that will continue into the future through his work, his mentorship of students and young professors, and four decades of teaching. A complete review of Emilio's scholarly publications and initiatives would fill too many pages, but his contributions can be seen as clustering into five areas of specialization: (1) international trade and finance, (2) international agricultural trade, (3) industrial organization and market structure, (4) the macroeconomics of agriculture, and (5) economic growth and development.

In the late 1970s, following his first doctoral thesis in development economics and then a second dissertation devoted to the Common Agricultural Policy of the European Economic Community, Emilio began to focus on a wide range of topics and methodologies, including the study of markets in crude oil, biofuels and alternative energies; financial markets; economic integration; and the markets for diverse agricultural products, among others. On all these topics he worked with colleagues and students such as Robert Sorensen, David Debertin, J. Christian, Elaine Grigsby, J. Scott Shonkwiler, his PhD advisee Edward Canler, and his brother Angelos Pagoulatos, among others.<sup>1</sup> But without question, the field of his most ambitious and innovative research and

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contributions is where industrial organization intersects with international trade, especially the analysis of the impact of trade and industry structure on firms' behavior and performance.

Extraordinarily well-read – this was always one of his trademarks – in these areas and always willing and able to devise new ways of focusing on concrete issues, Emilio was one of the first to explore from multiple points of view the causes and consequences of the relation between domestic market structure and trade. Topics he subjected to closer examination include, among others, the study of the determinants of price elasticities of industry demand; the relation between concentration, profitability and international trade; the impact of advertising on industry performance; oligopoly and oligopsony power; the disciplining effect of trade on domestic firms; two-way trade; the study of home bias; and the consequences of rent seeking.

In these fields, Emilio left parallel legacies through his teaching and mentoring in the four universities in which he taught. As teacher or mentor he engaged in direct collaborations with Ph.D. advisees like Elena Lopez (University of Alcalá, Spain) and Martha Field (Greenfield Community College). He also mentored, formally or informally, several young agricultural economist colleagues, including Azzeddine Azzam (Nebraska) and Rigoberto Lopez (Connecticut), who went on to train new PhD and Master's students who in turn have expanded his legacy. Emilio also worked in informal collaboration with many colleagues, such as Robert Sorensen of the University of Missouri and Ian Sheldon of The Ohio State University, among others.

That his mentorship proved to be pleasurable as well as productive owed much to Emilio's affable and unassuming personality, so well-known to all who have studied and worked with him. His character, generosity, and loyalty have left a lasting mark on all of us who think of ourselves as fortunate enough to be members of the school of Emilio Pagoulatos.

## About This Special Issue and Evolution of Related Work

This special issue includes two reprints representative of Emilio's work and three new articles from colleagues whom Emilio influenced. Their themes directly reflect Emilio's interest in industrial organization and trade, topics he not only engaged in but also encouraged others to pursue.

Traditionally, nearly all models of industrial organization assumed closed economies even while international trade and the rise of globalization were opening up important competitive forces that brought profound changes in their wake. Emilio Pagoulatos was one of the first analysts, along with Richard Caves at Harvard and a few others, to study the influence of an open economy on industry performance. His status as a pioneer in this field is reflected in the choice of innovative topics he pursued, particularly in regard to agricultural and food markets.

While at Missouri, one of Emilio's fundamental contributions was to analyze price competition when the price elasticity of demand is not considered exogenous, as traditionally assumed in the industrial organization literature. In 1986, Pagoulatos and Sorensen surprised industrial organization scholars with an article in the *International Journal of Industrial Organization*, which is reproduced in this special issue. They endogenized the price elasticity of demand to explain inter-industry differences and proved that price elasticity is in part determined by the competitive behavior of firms (reverse causality) and that high advertising expenditures result in lower elasticities of demand, confirming the persuasive rather than informative role of advertising using the food industries as a case study. This study, along with other insightful work Emilio published with Sorensen in the *European Economic Review*, *The Quarterly Review of Economics and Business*, *Southern Economic Journal*, and the *Southern Journal of Agricultural Economics*, among others, were the fruit of a highly prolific academic relationship whose results were widely recognized as important and timely.<sup>2</sup>

After his move to Florida, Emilio engaged in research with a new group of scholars and students. The latter included Elena Lopez, whose PhD dissertation dealt with the causes and consequences of intra-industry trade. Continuing this work after Elena Lopez became an assistant professor at the University of Alcalá in Madrid, in 2002 they co-authored the article that has been reproduced in this issue, published in the *Journal of Industry, Competition and Trade*. As its title indicates, "Estimates and Determinants of Armington Elasticities for the U.S. food Industry" provides estimates of elasticities of substitution between domestic and imported goods, and explains the inter-industry differences among these coefficients in terms of industry sectoral characteristics. Building on his and Sorensen's pioneering article in the *International Journal of Industrial Organization*, Lopez and Pagoulatos (2002) proved that the values of the Armington elasticities of substitution are influenced by firms' competitive behavior in addition to other elements of the industries' structure.

At the University of Nebraska Emilio collaborated with, and mentored, Azzeddine Azzam. Together they researched topics related to the linkage between world macroeconomic factors and prices of internationally traded commodities (Pagoulatos, Azzam, and Kitazawa 1990), vertical integration and coordination in the food system (Azzam and Pagoulatos 1999a), and the new empirical industrial organization (NEIO) (Azzam and Pagoulatos

1990; 1999b). But their most important project together was Azzam and Pagoulatos (1990), a widely-cited article published in *Journal of Agricultural Economics* titled “Testing Oligopolistic and Oligopsonistic Behavior: An Application to the U.S. Meatpacking Industry.” It is the first paper to parametrize and estimate separately the degree of oligopoly and oligopsony power. Together with a similar paper by Schroeter (1988) (also a contributor to this special issue), the paper by Emilio and Azzeddine introduced structural microeconomic (NEIO) models of competition in the meatpacking industry, departing from previous studies that used reduced-form models under the structure-conduct-performance paradigm. Emilio’s work with Azzeddine also provided the original impetus for future collaboration between Azzeddine and John Schroeter on meatpacking competition, a collaboration that spanned more than two decades.

In collaboration with Joshua Parcel, a former student of John Schroeter at Iowa State University, Azzeddine and John (Parcel, Schroeter, and Azzam 2018) contribute a new paper to this special issue. It is entitled “A Re-Examination of Multi-Stage Economies in Hog Farming” This paper, which aligns with Emilio’s interest in vertical relationships in the food system, contributes to the empirical literature on vertical integration versus vertical separation through estimation of a multi-stage cost function of hog production. The paper explains why, according to the standards of traditional single-stage scale economies, smaller and presumably high-cost operations may actually be low-cost if vertical economies of scope more than offset stage-specific scale diseconomies. Such interplay between vertical scope economies and stage-specific economies may help explain why small firms manage to co-exist with large ones – a common pattern in the agro-food industries.

After moving to the University of Connecticut in 1987, Emilio worked in close collaboration with his Ph.D. student Martha Field and then-associate professor Rigoberto Lopez, introducing them to emerging topics in industrial organization and trade. A key paper by Field and Pagoulatos was published in 1997 in the *Southern Economic Journal*. Combining three areas of Emilio’s expertise – trade, industrial organization, and macroeconomics – this paper provides evidence of cyclical behavior in the price elasticity of demand facing food industries, thus questioning previous work that had found this sector to be counter-cyclical (e. g., demand becoming more price-inelastic during recessions). By endogenizing price elasticities, this work demonstrates what was intuitively known but not empirically demonstrated: consumers are more price-sensitive during recessions. Another key paper by Field and Pagoulatos was published in 1998 in *Applied Economics*, in which they examine the ‘trade-as-discipline’ hypothesis by investigating the impact of foreign trade elasticities on domestic price-cost margins; that is, the generally overlooked role of foreign competition in forcing domestic firms to behave competitively.

While at Connecticut, Emilio and Rigoberto Lopez published four journal articles and two book chapters in the then emerging areas of the new political economy and rent seeking. The most prominent of their new political economy work is the 1996 paper, published in *Economic Inquiry*, in which they identified the determinants of the rates of trade protection and political action committee (PAC) contributions by U.S. food industries. In their most prominent paper on rent seeking, published in 1994 in *Public Choice*, Lopez and Pagoulatos measure rent seeking and dissipation from favorable trade policies connected to PAC contributions in the food industries. Further collaborations between Rigoberto and Emilio’s students and colleagues include Lopez, Azzam, and Lirón-España (2002) in *Review of Industrial Organization*; cited over 100 times; Azzam, Lopez, and Lopez (2004) in the *Journal of Productivity Analysis*; Lopez and Lopez (2009), which received the outstanding article award in *Agribusiness: An International Journal*; and, more recently, Lopez, He, and Azzam (2017) in the *Journal of Agricultural Economics*.

Rigoberto Lopez’s contribution to this special issue is a new article entitled “Are online and offline advertising substitutes or complements? Evidence from the U.S. food industries”, written in collaboration with his Ph.D. student Xi He –which makes her Emilio’s academic granddaughter–, and Yizao Liu, a former assistant professor at UConn now assistant professor at Penn State University. He, Lopez, and Liu (2018) focus on one of Emilio’s favorite topics: advertising. More specifically, they investigate whether or not online and offline advertising are substitutes or complements for three industries: ready-to-eat cereal, beer, and sodas. The study finds that although traditional (offline) advertising media (such as TV and print) are close substitutes, online advertising has been a complement to, rather than a substitute for offline advertising. They further show that adoption of online advertising has lowered the overall cost of advertising needed for achieving a sales target and that its complementarity effect is weakening over time.

This special issue also includes a new paper by Ian Sheldon, co-authored with Jihyun Eum and Stanley Thompson (Eum, Sheldon, and Thompson 2018). The article “Asymmetric Trade Costs: Agricultural Trade among Developing and Developed Countries” uses a Ricardian trade model with data from 128 countries to estimate trade elasticities for the agricultural sector and concludes that the relatively low values obtained for these estimates when compared to the values reported by other studies for the manufacturing sector reflect larger heterogeneity in productivity in the agricultural sector, implying that the role of comparative advantage in countering trade costs should be strong. Furthermore, the model also reveals that the higher trade costs and lower agricultural productivity experienced by developing countries become major trade barriers for those

countries, leading to fewer agricultural exports on their part. This piece nicely honors Emilio's interests in both development economics and international agricultural trade.

## Concluding Remarks

Through this special issue, we students, friends and colleagues of Emilio Pagoulatos take deep pleasure in offering our sincerely felt homage to his intellectual leadership and contributions over four decades. In a way, Emilio became an architect after all – an architect who built a school of scholars committed to the empirical economics of agro-food industrial organization and trade. We wish him and Jan a lengthy and fruitful retirement and hope that both they and others will welcome this special issue as a small gift through which we acknowledge and reciprocate the warm friendship and guidance he has given us over many years.

## Notes

- 1 Christian and Pagoulatos (1973); Pagoulatos, Debertin, and Pagoulatos (1978); Pagoulatos, Pagoulatos, and Debertin (1978); Grigsby and Pagoulatos (1986); Pagoulatos, Shonkwiler, and Canler (1984).
- 2 Pagoulatos and Sorensen (1976a, 1976b, 1976c, 1979, 1981).

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