



Special Symposium on Lifetime Achievements of Rolf Färe and Shawna Grosskopf

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1 Introduction

At the XVII European Workshop on Efficiency and Productivity Analysis (EWEPA), hosted by Maria Conceição A. Silva and her colleagues at Católica Porto Business School, Universidade Católica Portuguesa, in Porto, Portugal June 27–29, 2022, the Lifetime Achievement Award was given to Shawna Grosskopf and Rolf Färe jointly by EWEPA and by the International Society for Efficiency and Productivity Analysis (ISEaPA). The award goes to scholars whose iconic research contributions helped to start and to accelerate advancements and interest in the field of productivity and efficiency analysis.



Shawna Grosskopf and Rolf Färe

This Special Symposium in their honor is composed of four papers by six co-authors who are leaders in the field. The papers focus on singular contributions that Rolf and Shawna have made in their distinguished careers. However, the

Symposium has many silent contributors to the literatures that Rolf and Shawna have greatly impacted or helped to originate. Thus, the special issue is also dedicated to this wide-ranging set of scholars, practitioners, and students from the efficiency and productivity community who have benefitted from and contributed to our intellectual discipline.

In addition to the papers contained in this Symposium are several communications from Rolf and Shawna's long-time colleagues that we would be remiss to ignore. I will briefly quote from portions of one in particular from Robert R. Russell, himself an iconic figure whose contributions to the theory of productivity and efficiency are legend:

“My friendship with Rolf has spanned nearly half a century: We first met in 1976 at Wolfgang Eichhorn’s international symposium on theory and applications of economic indices. At that workshop, I gave a paper on price aggregation, but I soon was inspired to switch directions and develop research agendas on theoretical efficiency measurement and modeling environmental technologies, which have kept me occupied for many years. In large part, that switch was influenced by discussions with Rolf that began in Karlsruhe...”

“Soon thereafter, Rolf connected with Shawna, and their partnership has fertilized the work of so many in our field, not just mine. They are never satisfied to neatly tie up all the loose ends or close the book on a particular question of theory or measurement. Instead, they are like Hansel and Gretel in the storybook classic, leaving a trail of crumbs for their students and colleagues to pick up and follow along. In so doing, their impact on the profession has been profound, and this honorific session is eminently well deserved.”

R. R. Russell-May 31, 2022.

We will next provide a brief summary of the contributions to this symposium.

Our first paper is strategically placed in the Symposium and is authored by Rolf and Shawna's most prolific and well-known student, Valentin Zelenyuk. In his contribution

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“Productivity Analysis: Roots, Foundations, Trends and Perspectives” Zelenyuk gives a historical overview of productivity analysis, its theoretical underpinnings, importance, and the various indices that have been used to measure it, with a focus on the contributions to this literature from Rolf Färe and Shawna Grosskopf (and their many co-authors), as well as the many related works they have inspired. Zelenyuk also provides a discussion of likely perspectives on the use of standard productivity measurement for policy-makers and research scholars.

The second paper, by Robert G. Chambers is “Path-based Set Representations.” The paper focuses on several issues involving some of Rolf and Shawna’s most influential contributions to the literature on Malmquist index number and directional distance function theory. In his contribution Chambers derives the cardinal functional representations of sets using monotone paths and uses these to construct performance metrics that can be used in production and consumer economics, efficiency and productivity measurement and index and indicator construction, all of which are directly related to contributions by Rolf and Shawna, many of which originated in articles they published in the *Journal of Productivity Analysis*.

Our third contribution is by Paul Wilson and Leopold Simar “Another Look at Productivity Growth in Industrialized Countries,” and revisits one of the most iconic of Rolf and Shawna’s contributions that appeared in the *American Economic Review* but was based on many initial works that appeared in the *Journal of Productivity Analysis*. They utilize some of Simar and Wilson’s relatively recent statistical developments, revisiting the OECD countries analyzed in Färe et al. (1994), estimating productivity change using the Malmquist index and its decompositions

but also standard errors using the recently developed inferential techniques of Kneip et al. (2015, 2021).

Our final contribution is “Efficiency Decomposition for Multi-Level Multi-Components Production Technologies” by Antonio Peyrache and Maria Conceição A. Silva. This paper addresses the efficiency measurement of firms composed by multiple components, and assessed at different decision levels. Based in part on the early work of contributions of Färe and Grosskopf and some of their co-authors (see e.g., Shephard and Färe (1980); Färe (1986)), Peyrache and Silva, among other things, develop dynamic network models for three levels of decision/production and contrast their new efficiency measures using a directional distance function with existing radial models.

Compliance with ethical standards

Conflict of interest The author declares no competing interests.

References

- Färe R (1986) A dynamic non-parametric measure of output efficiency. *Oper Res Lett* 5(2):83–85
- Färe R, Grosskopf S, Norris M, Zhang Z (1994) Productivity growth, technical progress, and efficiency change in industrialized countries. *Am Econ Rev* 84:66–83
- Kneip A, Simar L, Wilson PW (2015) When bias kills the variance: central limit theorems for DEA and FDH efficiency scores. *Econom Theory* 31:394–422
- Kneip A, Simar L, Wilson PW (2021) Inference in dynamic, non-parametric models of production: central limit theorems for Malmquist indices. *Econom Theory* 37:537–572
- Shephard RW, Färe R (1980) *Dynamic theory of production*, Vol. 50. Meisenheim, Verlag Anton Hain, Meisenheim