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Energy Demand in Industry

What Factors Are Important?

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Preface

This empirical study applies the production risk approach to benchmark energy demand in the South Korean industrial sector. It is an updated and improved version of my first Ph.D. licentiate thesis, which was prepared at Swiss Management University in 2013. This improved version considers the latest data in the productivity account.

South Korea is one of our times' most successful newly industrialized economies. It serves as an important model of industrial development under the condition of lack of natural resources but human capital-driven development. Many developing countries see South Korea as a model for their development efforts. Hence, this book is an important addition to the existing literature on industrial development. In addition, it deals with energy which is one of the most important production inputs.

South Korea has enjoyed a rapid economic growth and development for the last 30 years. A rapid increase in energy use, especially petroleum, natural gas, and electricity, and particularly in the industrial sector has fueled South Korea's economic growth, but with limited fossil fuel resources of its own, South Korea became entirely dependent on energy imports.

This study investigates the effects of different inputs factors of production on the mean output and output variability. In addition, the study estimates returns from different inputs used in the production. Estimation of the returns from different inputs is achieved by determination of marginal value products and the total value products. As mentioned, South Korea is heavily dependent on energy imports, therefore, special attention is given in this study to energy use in industrial production to assess its variability and assess different factors that affect this variability in the production process. Producers are portfolio managers in the sense that they use inputs to balance expected economic return and variance of return. Understanding the determinants of technology adoption has long been a subject of interest among researchers. The existing literature has mainly concentrated on socio-economic factors with little insight into the risk nature of these technologies and inputs that impose upon their use by the producers. This book estimates the structure of the stochastic production technology in the South Korean industrial sector, allowing for a more flexible specification of the technology than previous studies.

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May the Almighty God bless you all abundantly.

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