

**Y. Aoyama, Y. Fujiwara, Y. Ikeda, H. Iyetomi, W. Souma:
Econophysics and Companies: Statistical Life and Death
in Complex Business Networks**

Cambridge University Press, Cambridge, 2010, 234 pages

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Received: 19 July 2011 / Accepted: 1 August 2011 / Published online: 19 August 2011
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Although there are many books on econophysics books currently flooding the market, this book is unique. It focuses less on markets (“finance”) and more on the real economy—i.e., on firms, banks, and people. Its analysis of the multiple levels of an economic network, e.g., shareholding, transactions (as in Sect. 4.3), is excellent. This book is also the first to present an analysis of Japanese network databases, and the volume will thus be an excellent textbook for anyone who wants to understand an economy as a multiple-level complex network of heterogeneous interacting agents.

In a departure from most monographs on economics, this book requires of the reader only a minimal facility with higher mathematics. Although essential and somewhat more complicated math appears in the tables, the main text includes equations that require no more than a knowledge of powers (power laws).

Instead of focusing on mathematics, this book concentrates on a presentation of the concepts associated with econophysics, and does so with remarkable success. The book has five authors who apparently maintain an ongoing collaboration, and their concern that the material be accurate and easy to assimilate is of great benefit to the reader.

Aoyama et al. examine a number of common misunderstandings and myths associated with this field including “Pareto’s 80–20 rule” (p. 46), the “golden ratio” (p. 53), and the infamous “six degrees of separation” (p. 106f). These and others are explained and analyzed using the newly-developed tools of econophysics.

Particularly charming are the “Prologue” and “Epilogue” written by three from Tuscany. Their presentation of the complexity and subtlety of the field is conversational, relaxed, and inviting.

The lack of complex mathematical analyses may be frustrating to those readers looking for it. For example, the results in the table on page 43 are extremely interesting, and may be

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original with the authors, but no derivation is given. I understand that the authors are preparing a second book, scheduled to appear in 2012. It will be more mathematically oriented and should serve as an excellent complement to this present volume.