

prospects of reunification of North and South Korea. His discussion successfully marries an understanding of the experiences of German unification and the theoretical issues involving transition of an autarchic command economy.

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Technology Management and International Business: Internationalization of R&D and Technology. Edited by Ove Grandstrand, Lars Hakanson, and Sören Sjölander. Chichester, U.K.: John Wiley and Sons, 1992.

This is a very informative and rather comprehensive volume that focuses primarily on explaining the degree to which technology-related activities are internationalized in multinational corporations and the implications of the degree of internationalized observed. Although the book is a collection of conference papers by several authors, the volume is in general remarkably well-focused and well-organized. The editors provide an overview of the book in Chapter 1, and an extremely concise and helpful summary of the book's various results in Chapter 2. Their attempt to summarize the major results on pages 236–38 is particularly useful and quite ambitious in view of the wide range of issues they try to summarize. Chapter 2 also provides another general overview of the issues involved that is of some interest.

The book's core studies attempt to add to the rather sparse empirical literature in this field, and

can be divided into two broad types. Chapters 3–5 and 7 are all rather comprehensive statistical studies based on large samples of firm level data. Chapters 3–4 use a database on U.S.-registered patents controlled by a large sample of the world's largest manufacturing firms, both showing that technological activities of these firms tend to be heavily concentrated in their respective home countries but with the latter study emphasizing the variation in patterns observed across countries and industries. Chapter 5 analyses locational determinants in a large sample of R&D establishments belonging to the 20 largest manufacturing firms in Sweden, emphasizing the importance of demand-related variables in the location decision. Chapter 7 summarizes the results of a survey of the role of overseas R&D units in the increasing use of global approaches to innovation in a large number of the world's largest firms.

In contrast, Chapters 6, 8, and 9 are based on much more limited surveys and are best characterized as case studies of a limited sample of firms. Chapter 10 is also based on a descriptive analysis of individual cases and thus falls in this category though this chapter is somewhat of a disappointment since originally generated empirical information is not presented. In general, these more limited studies focus on examples of how multinationals internationalize their technological activities, but it is difficult to attach much significance to the conclusions from such limited studies, especially when the more comprehensive statistical studies provided ample evidence that internationalization of R&D and technology is rather limited in multinationals at best. Indeed, given this evidence, one might ask why write a book about internationalization of R&D and technology in multinationals when such activity is apparently extremely limited? Clearly the implication is that the more comprehensive studies are missing aspects of this internationalization that the case studies do a better job of revealing. My economic intuition tells me there may be something to this point of view but the statistician in me wonders about the significance of such observations. Moreover, one must clearly be cautious in this respect as excess focus on limited case

studies has contributed considerably to distorted perceptions of other economic issues (for example the supposed closeness of the Japanese market).

One of the reasons the more comprehensive studies may understate the importance of internationalization in this context is the lack of data that measure what is really the subject of study here. In particular, it is bothersome that the patent data used in Chapters 3–4 are measured only by number and that no attempt has been made to distinguish between the economic value of different patents. If such measures, even rather bad proxies, could be constructed, they might reveal patterns which are significantly different from those suggested by the number of patents alone. However, the development of such measures would clearly be a monumental task, if it is possible at all. Moreover, since the empirical work in this area is lacking as noted above, the authors of the more comprehensive studies in particular deserve praise for making important contributions by presenting important new empirical evidence, despite whatever weaknesses the databases may have.

As the above comments indicate, the state of knowledge on the internationalization of R&D and technology in multinationals is far from ideal. Although a reasonable conceptual framework for analysing the issues has evolved within the context to the theory of the multinational firm, measurement problems and the lack of empirical evidence still represent significant constraints on researchers. In the words of the editors (p. 223),

It is yet premature to make a coherent synthesis and to offer conclusions ... This is a reflection of the current state of knowledge in which we know a great deal of the phenomenon itself and some of its determinants but little in the form of systematic, quantitative evidence of its effect.

In view of this point, I would like to appeal to researchers working in this field to continue their efforts to expand and improve the empirical research on this important topic.

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The Control and Management of Government Expenditure: Issues and Experience in Asian Countries. By United Nations Development Programme and Economic and Social Commission for Asia and the Pacific. New York: United Nations, 1993. Pp. 496.

This volume presents information on time trends of, and procedures for, government budgeting in nine selected Asian countries. It contains data on the magnitude of total government expenditure (TGE), the ratio of TGE to gross domestic product (GDP), the composition of TGE, and the growth of each over time. It discusses the different budgetary procedures that take place in each of the countries — budget preparation, approval procedures, control of expenditure, *ex post* evaluation. It also discusses various measures of budgetary discipline (or lack thereof).

What appears to be the underlying motivation of the manuscript is an attempt to come to grips with the role of the state in economic development. A measure or index of this role, it is argued, is the ratio of TGE to GDP. But as the manuscript correctly points out, it is difficult to establish a causal link between this ratio and economic development. Governments are subject to different demands from their constituencies that will have an effect on the structure or composition of TGE. The resulting composition could very well reflect on the one hand forces that promote development and on the other forces that pull in the opposite direction. An example of the latter might be subsidies designed to pacify politically powerful agents.

The strength of the manuscript lies in the detailed description of the budgetary process in each of the nine countries. The country studies provide a rich base of information on the actual process, from preparation to *ex post* evaluation. Particularly interesting is the way governments partition their expenditure between those that are meant to promote development and those that are meant to maintain current operations. In some the partition is done in terms of current versus capital expenditure, and in others in terms of recurring versus