BOOK REVIEWS

China and the Global Energy Crisis: Development and Prospects for China's Oil and Natural Gas, by Tatsu Kambara and Christopher Howe (Cheltenham UK: Edward Elgar, 2007). 144 pages, cloth, price $85; ISBN 978-1-84542-966-9.

China has experienced explosive growth in energy use and seems poised for even more. China is now the second largest consumer of petroleum in the world, though its oil use per capita is still only a tenth the level of advanced economies. Meeting China's rising electricity demand requires commissioning the equivalent of a new one-gigawatt electric power plant every five days.

This book traces the history and future prospects for China's oil and natural gas production and refining capacity. There is an interesting description of how, when cut off from direct contact with most Western sources of expertise in the 1960s, the Chinese studied the engineering and technical literature on their own, and then applied it via trial and error to solve their local production challenges. As a result, the Chinese were able to achieve good final recovery rates, though the authors conclude that oil production from the large older fields in eastern China, such as Daqing, Shengli, and Liaohe, which between them account for nearly half of current production levels, are now unavoidably at their peaks or already in decline. Nevertheless, Kambara and Howe see the potential for China to increase its domestic oil production an additional 5-10% above current levels over the next 10-15 years, thanks to promising sources in western and offshore China.

The book also chronicles the evolution of the institutional structure of the Chinese oil industry into the present three quasi-competitive, quasi-national oil companies (PetroChina, SINPOPEC, and CNOOC). The authors caution that investing the capital needed to develop, transport, and refine China's remaining oil and gas reserves is a huge challenge, requiring further significant institutional changes in order to succeed. Kambara and Howe note the contrast between the massive-scale projects needed for oil and the "handicraft" form of some Chinese coal production, in which "enterprising individuals can add to coal output with the aid of a shovel and bucket" (p. 44). The scale of most of China's refineries is also woefully small. Eighty percent of China's refineries have capacities below 20,000 barrels a day, and only four are up to the current 200,000 b/d international norm. The needs for refinery modernization are particularly acute as China imports increasing quantities of high-sulfur crude from the Middle East.

Certainly the Chinese will import more, even if the significant domestic production challenges that the book identifies are successfully met, as the recent growth of demand far outpaces the most optimistic projections of domestic supply. Of the 4.75 mbd increase in world petroleum consumption between 2003 and 2006, over a third came from China alone, and less than a fifth of the increase in Chinese demand was met by increased Chinese domestic production.

The authors believe that the impact on world oil prices of this growing Chinese thirst for imports has been overstated by some analysts. Kambara and Howe note that global proved oil reserves at the end of 2005 were 40 times annual production, which they judge to be an ample supply. However, much of those claimed reserves are in the Middle East where the data are of unclear quality. For example, *Petroleum Intelligence Weekly* has claimed that internal Kuwaiti documents establish that the country's official reserves have been overstated by a factor of two. Kambara and Howe also believe that the recent international oil price movements have been magnified by "speculation that bears little relationship to the underlying trends of demand and supply" (p. 114).

In terms of those underlying trends in demand and supply, though, since the 2005 numbers that were available when the authors wrote those words, we have seen a one mbd decline in Saudi oil production, a half mbd increase in Chinese oil imports, and a $15/barrel increase in the price of crude petroleum.

Which, if I may say so, is all the more reason to be interested in the issues explored in this book.

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The Political Economy of Power Sector Reform: The Experiences of Five Major Developing Countries, by David G. Victor and Thomas C. Heller (eds.). (Cambridge: Cambridge University Press 2007), 330 pages, ISBN-13: 978-0-521-86502-9 hardback.

This book is a valuable addition to the recently accumulating literature on experiences of regions or countries with electricity-sector reform. Notable examples of collections of such studies are the comprehensive volume edited by Sioshansi and Pfaffenberger (2006), the Special Issue of the *Energy Journal* (2005) on European Electricity Liberalisation, and an issue of the *Economic and Political Weekly* (2005) devoted to global experience with electricity reform. There are also several studies undertaken in connection with sector reform programs, e.g., by the World Bank. The evidence of the pros and cons of power sector reform emerging from these studies is not clear-cut and uniform, but at least they give policy reformers some guidance and understanding of how to undertake successful market and regulatory reforms in this complex sector.

The book edited by Victor and Heller distinguishes itself from other reform studies primarily in two ways. Firstly, it focuses explicitly on the experiences with power-sector reform of five major developing countries: Brazil, China, India, Mexico, and South Africa. Secondly, because both the editors come from the legal profession (Professor of Law and Professor of International Legal Studies, respectively, at Stanford University), there is more emphasis on legal, regulatory aspects of power-sector reform than typically is the case in the studies referred to above. There is some country overlap with the above studies; e.g., Brazil is also covered in the Sioshansi and Pfaffenberger (2006) collection, and India and South Africa are treated in the *Economic and Political Weekly* (2005) issue.

In addition to the five interesting country studies in the book, the editors have written an excellent *Introduction and Overview* Chapter and a concluding Chapter with *Major Conclusions*. The main goal of the Victor and Heller analysis is to explain why the power-sector reform efforts of the five countries have stalled short of the intended outcome. Their working hypothesis is that “this outcome is due to structural forces that are rooted in the political and institutional context of developing countries” … and that ... “this context leads not to the ideal textbook outcomes, but to a hybrid – what we call a “dual market” – that combines some features of textbook reform with powerful residues of state monopolies” (p.11).

According to Victor and Heller, they find no application of the “standard textbook model,” as they call it, in the power-sector reform undertaken by the five developing countries under review. This model is generally associated with the reform approach of the UK and some other countries like New Zealand, Norway, Chile, and later the U.S, containing elements like privatization of state enterprises, vertical separation (unbundling) of competitive and natural-monopoly functions, horizontal restructuring of production activities, establishing spot, financial, and capacity markets for trade in electricity, incentive regulation of monopoly functions, etc. However, all the five countries had a least some vision of this “textbook model” as a foundation of their approach to reform in the beginning, because it was so strongly articulated at the time by influential parties as the way to go, but it was later decided to take an alternative route along the “dual market model of dual firms” approach of Victor and Heller.

What then is this dual-market model of dual firms? According to Victor and Heller, dual firms are characterized by their ability to perform two quite distinct tasks simultaneously. On the one hand, they have the political connections necessary to mobilize resources that are essential to their commercial viability, such as the regular payment of subsidies from the government to their various activities or the securing of supplies that are allocated through politicized planning procedures. On the other hand, these firms are sufficiently well run and managed and have the necessary standing and power in their markets to stand up against attempts at getting involved in uneconomic projects argued for by the government or other interested parties or excessive wage demands by labor unions. Victor and Heller do not claim that the outcome of this dual model is necessarily the most desirable one in terms of economic efficiency or good governance, but they suggest that the outcome is likely and workably efficient in countries where market institutions are weak. They also argue that the industrial market form called dual markets in this context may prove to be quite stable politically, even if it falls short of economic efficiency.

Based on the experiences of the five countries documented in the country chapters of the book, Victor and Heller derive their dual market model in Chapter 7 through a series of arguments and deductions. They discuss it in an institutional context within which reformers seek to change the power sector, where elements like financing under hard budget constraints, issues connected with judicial reform and independent regulation, and labor relations in factor markets may contribute to a dual-market form rather than a "textbook"-model form. They also involve elements from what they call the social contract that has typically existed between the power sector and society at large, providing certain public benefits, which may be infringed upon by deregulation and liberalization of power markets under sector reform. Here they point to three issues: service to low-income households, protection of the environment, and long-term investment in new technologies.

The dual-market model of dual firms is an interesting analytical concept and captures undoubtedly important elements in a power sector reform process of developing countries. But should it be considered as a separate, independent model of industrial organization for explaining permanent features of power-sector reform or as a model for the transitory phase of a developing country to a mature, developed economy, when the "textbook" model of IO becomes more relevant and applicable? I think it depends to a large extent on one's notion of IO textbook models applied to a specific sector like electricity. This application has come a long way since the rather simplistic analyses in the early stages of the power sector reforms of the late 1980s, compared with the far more sophisticated applications and understanding of the specific features of the electricity sector under market reform as of today. But then one should not be dogmatic, but rather elective, when choosing from the box of tools and models at hand that best serve a specific analytical purpose.

This book should be a must to read for everyone interested in the political economy of power-sector reform, of developing as well as developed countries. It extends our knowledge and understanding of the complex issues connected to the reform of an important sector of the economy and contains a wealth of information and data specifically for the power-sector reform process of the five countries covered in the book.

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