BOOK REVIEWS

Oil and Gas in Central Asia and Northwest China by DR. JAMES P. DORIAN (United Kingdom: CWC Publishing Ltd., 2001). 176 pages, Sector specific management report, ISBN 1 903050 12 X.

Oil and Gas in Central Asia and Northwest China provides a thorough evaluation of the oil and gas sectors of the five Central Asian republics - Kazakhstan, Kyrgyzstan, Tajikistan Turkmenistan, and Uzbekistan - and Xinjiang, China. The author, Dr. James Dorian, is seeking to provide assistance to business planners in formulating long-term investment and market development strategies in these complex, and volatile, political regimes. In this endeavor, he has, undoubtedly succeeded. This is one of the most comprehensive reports that has been written on this subject since the collapse of the Soviet Union in December 1991. The report covers the economic, legislative and political regimes that currently exist in each of the five Central Asia republics and Xinjiang, the potential opportunities for regional cooperation and trade, and the investment climate facing foreign direct investors in the region.

The report is divided into nine chapters. The first discusses the development of trade and hydrocarbon resources in the region. In this chapter, a general introduction, Dr. Dorian pays particular attention to the influence—domination—of the Russian Empire, and later the Soviet Union, over the development of Central Asian Resources. To cite only one example, the report traces the roots of the current transportation network which was established during the Soviet era and intended to move gas to and through the FSU. The development of a natural gas export pipeline to Europe—bypassing Soviet territory—was not even a consideration. The construction of such a line—say from Kazakhstan to Europe via Turkey, and Iran—will be frustrated, by the complex geopolitical relations in the region, i.e., between the U.S. and Iran. In the meantime, "the only existing and viable export routes [will continue to] go in and out of Russia, providing Moscow with the power to participate in any joint venture involving oil exploration and development in Russia's 'near abroad', to limit capacity or to impose tariffs..." (p. 11).

Chapter 2, Economic and Political Overview, provides a general overview of the region, once again, calling the readers attention to the Russia/Soviet legacy and Russia's continued domination over the former Soviet Republics. As might have been anticipated, Russia is reluctant to relinquish control over the transportation network and has not been sympathetic to any proposal that bypasses Russian territory. The republics, on the other hand, are keen to break the monopoly and are working with foreign investors to establish non-Russian oil export pipelines to Europe, via Turkey, Iran, Iraq, and even Georgia.

Chapter 3, Hydrocarbon Resources, provides a general overview of the hydrocarbon resources in the republics and Xinjiang (the Tarim Basin) and recent efforts to encourage, and promote foreign investment, the diversification of energy sources and export markets, and energy self-sufficiency. Potential oil export routes—and the geopolitical minefield that each of these must cross to become a reality—are examined in detail—from Turkey's vehement opposition to routes crossing the Black Sea (the narrow Bosporous Straits), to Russia's demands that any pipeline carrying crude oil from the Caspian Sea "must" cross its territory.

Chapters 4-6 provide detailed economic and political profiles of Kazakhstan, Turkmenistan, and Uzbekistan. The country 'studies' include a close examination of the state of the oil and gas industry in each of the three republics—covering critical issues and considerations such as the current status of oil and gas reserves, production/refining infrastructure, pipeline/transportation networks, joint venture activity, country risk analysis, pipeline proposals, energy consumption and growth rates, and petroleum legislation.

Chapter 7 provides a review and analysis of contemporary, and potential, policies designed to facilitate intra-regional cooperation amongst the five republics and Xinjiang. With problems of energy shortages in southern Kazakhstan—and sporadic shortages throughout the republics due to the inadequacies of existing infrastructure—intra-regional cooperation in oil and gas trade is critical. Disappointing results in the Tarim Basin—"the desert of no return"—make China's emergence as a critical counterweight to Russia inevitable.

Finally, Chapter 8, Investment Issues and Concerns, reviews the problems and bottlenecks that are frustrating the potential for foreign direct investment in the region. Neglected resources, low efficiencies in recovery, outdated equipment and technology, currency risk, corruption, questions concerning the ownership of reserves, unclear (and volatile) legislation, and political uncertainty are all factors that must be considered carefully before large capital investments can be successfully implemented. On this subject, Dr. Dorian offers a number of useful suggestions including the adoption of a two-tier negotiating policy (with both local and central governments), on-site appraisals, and explicitly defining the terminology in all contracts.

As one reviews the detailed information on the five republics and Xinjiang China, a clear picture starts to emerge about the region. The most important obstacle to the future development of the region is the level and quality of infrastructure, including oil and gas pipelines. To frustrate matters further, the governments in Central Asia and China are emphasizing energy self-sufficiency at the expense of developing trade links. Policies of self-sufficiency have been justified in the name of national security but impede any real progress in developing the multi-country infrastructure required to move the product to markets. The 'other' problems highlighted by the report include the inadequacy of energy policies within the republics, changing or unstable government

structures, political conflict, and difficulties with the existing communication infrastructure.

As the republics attempt to address these issues on an individual basis, all are planning to open up new export transportation routes. A few of the more advanced proposals include: Tengiz Kazakhstan to Novorossiysk Russia (the Caspian Pipeline Consortium); Kazakhstan to Europe via Turkey and Iran; Turkmenistan to Turkey via Azerbaijan and Georgia; and Turkmenistan to Xinjiang (the China Pipeline). There is no question that the vast potential for hydrocarbon development in Central Asia will continue to lure foreign companies and investors seeking to establish long-term positions in the region. These efforts will be frustrated by unstable tax regimes, currency risk, and legislative and environmental policies that jeopardize foreign direct investment. At the same time, the successful—and timely—realization of viable export options will require significant injections of capital (foreign investment), the adoption and implementation of new technology, and prudent and effective management policies.

As the report reviews country after country, one significant and perhaps insurmountable problem quickly presents itself. That is the inability for foreign company's fully to manage—and hedge—the risk associated with investing in the region. Traditionally when confronted with this multitude of risks, energy companies have used the process of owning the entire value chain, from the well head to terminal to tanker. This allowed them to "self hedge" a great deal of the risks that were otherwise impossible to hedge against. Given the current status of policies and legislation and the number of competing political interests involved in the oil and gas sector in Central Asia, that option is not yet available and may never be. Questions concerning the ownership of natural resources—and who has the right to acquire the revenues generated from mineral deposits—are particularly disturbing. Barring unforeseen developments in this area, the significant development and exploitation of these areas may take longer than anticipated.

Dr. Dorian emphasizes one additional problem. As the development of the region begins to unfold, regardless of the goals of the Central Asian republics, Russia will maintain a keen interest in preserving its authority over its former empire, 'the near abroad.' Oil and gas accounts for about half of Russia's foreign exchange earnings and contributes significantly to the national economy. While the Central Asian republics may desire to circumvent Russia's influence in the region, attempts to do so will be met with significant resistance from the Duma. At the present time, Russia commands the existing pipeline network, and has a comparative advantage, however slight, in the realm of political stability. In short, Russia has much to gain—and little to lose—by attempting to become a large energy supplier to Europe in its own right. By standing between Central Asia and Western Europe, it has the potential to become the largest energy broker on the greater European-Asian continent.

Given the September 2001 events in New York, and U.S. military presence in the Middle East and Uzbekistan, the geopolitical landscape of the Central Asian Republics can be expected to change significantly over the next few years. Oil and Gas in Central Asia and Northwest China provides a critical foundation from which the potential evolution of the resource base, and economic and geopolitical tensions in the region, may be evaluated. It is required reading for government agencies, companies and individuals that are actively participating and/or seeking to participate in the oil and gas sectors of Central Asia.

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The Politics of Oil-Producer Cooperation, by DAG HARALD CLAES (Boulder, New York, and London: Westview Press, 2001), 407 + xvii pages, ISBN 0-8133-6843-X.

This book presents an impressive survey of the economic and political literature of the past quarter-century that is related to explaining the behavior of oil producing countries. The list of References extends for 15 pages. Much of this literature is woven into the "analytic narrative" of the book's ten chapters: Introduction; Market Context; Political Context; OPEC as International Organization; Price and Production Policy of OPEC Countries; Country Case I: Saudi Arabia; OPEC: A Successful Cartel?"; Extending the Cooperation: OPEC and Non-OPEC Producers; Country Case II: Norway; Oil-Producer Cooperation and the Study of International Political Economy. There is much valuable information that is assembled, including 35 tables and 57 graphs, providing a detailed record of these events.

The opening chapter describes what the book is about. "What determines the cooperative behavior among the oil-producing countries? That is the question this book seeks to answer. ... Three analytical beliefs guide the study:

- Economic models of the oil market are not sufficient in understanding the cooperative behavior of the governments of the oil-producing states. ... [They] need to be supplemented by models and approaches capable of integrating an understanding of the policies of oil-producing states and the economic factors of the international oil market.
- Our understanding of the oil producers' behavior ... will increase if we are able to understand the dynamic relationship between factors at different analytical levels. ...This study provides a multilevel approach in explaining the cooperative behavior of oil-producing states.
- This is a study of the policy of oil-producing states, not a testing of their behavior against models of optimal economic behavior." (p.1)

The chapter then lists "a complex set of [six] explanatory propositions" that are generated by this "multilevel approach":

- "the success of oil-producer cooperation has been constrained both by fundamental economic factors, such as demand elasticity and lack of barriers to entry, and by other actors' behavior in the international oil market, such as that of the oil-consuming countries and the international oil companies.
- the institutionalization of cooperation between the oil producers has made the cooperation more successful than would otherwise have been the case.
- the collective action of the oil producers has created an additional profit to the producers.
- the oil-related decisions made by oil-producing states are influenced by interests outside the international oil market. States have more on their minds than profits.
- OPEC cooperation has been dependent on Saudi Arabia's performing a role as a hegemonic power. Saudi Arabia has carried a heavier burden than the rest of the members of OPEC.
- the larger a country's share of the total market becomes, the less likely it is that this country will pursue a free-rider strategy. ... A case study of ... [Norway] provides a diachronic approach to the question of why an individual oil producer chooses to cooperate." (pp. 18-19)

Yet none of these "explanatory propositions" seems remarkable or surprising. Few economists would disagree with any of them. The only disagreement that might be anticipated would be to #4, argued best by Adelman (1995).

More controversial that these six propositions would be Claes' assertion in Chapter 5 that OPEC was a "redundant cartel" in the 1971-81 period: "There was no 'role of OPEC' in the process until 1981, in the sense that the states' price and production behavior in the market was a result of institutional factors or collective action. The increase in the oil price in the first half of the seventies was a result of individual countries' utilizing the opportunities the market created. The market conditions were such that the actions performed by the members of OPEC would most likely have been the same without the presence of the organization." (p.181) This view has been advanced before, in several variations, "that OPEC was largely irrelevant as an organization and that its members acted competitively" (Gately 1984, p.1101). MacAvoy (1982) had argued that "...there was no avoiding the substantial price increases necessary to clear the market of annual increases in crude oil demand." (1982, pp. 56-57). Competitive models of OPEC producer behavior had been offered by Johany, by Cremer and Salehi-Isfahani, and by Teece - all referenced in Gately (1984). Yet most economists would prefer the view that in the 1970s the OPEC countries effectively cartelized the world oil market, exploiting their collective power to raise price above competitive levels by restricting production.

Claes employs a variety of model frameworks to advance his narrative: Roncaglia's trilateral oligopoly (consumers, producers, oil companies); political theory of Saudi Arabian hegemony within OPEC; n-person prisoners' dilemma; Olson's theory of collective provision of a public good (which Claes identifies as a high price). Yet none of these models involve quantitative relationships that rely upon behavioral estimation or testing of hypotheses. Instead the models provide a vocabulary for discussion of the phenomena at hand.

Much of this will not be very satisfying to economists, especially those interested in quantitative estimation of the important relationships in the world oil market, or in simulation models such as Gately (1995). The data on price and revenue are presented in nominal rather than real terms. The models are used to advance the narrative, but not to generate or test hypotheses. The presentation is primarily descriptive.

The great strength of the book is its coverage of the literature. Most of the major contributions are referenced, and many are discussed in detail. Of the few important papers that are overlooked, such as Griffin (1985), there is discussion of the subsequent literature that was generated.

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The Natural Gas Market: Sixty Years of Regulation and Deregulation by PAUL W. MACAVOY. (New Haven and London: Yale University Press, 2000). 140 pages, ISBN 0-300-08381-5.

Paul MacAvoy has prepared a nifty little book that chronicles the ebb and flow of Federal intervention in U.S. natural gas markets over the last sixty years and the effects of that intervention on the performance of the industry. In a real sense, this book is a summation of MacAvoy's own journey as an economic observer of U.S. natural gas markets since the publication of his doctoral dissertation on the subject at Yale in 1962.

He has organized the book in six parts. After an introduction, he presents an econometric model of wellhead prices and quantities, which he then exercises in part 3 to measure the gains and losses to society of the policy of wellhead price controls that was in place in various formats from roughly 1954 to 1979, and then phased-out prior to full wellhead decontrol in 1992. In parts 4 and 5, MacAvoy reviews the partial deregulation of gas transportation markets and its creation of a unified U.S. market and the efforts to date to "unbundle" local retail gas markets. He closes with some observations about the future performance of the industry given the legacy of this intervention.

If there is one topic upon which all energy economists agree, it is that natural gas wellhead price controls were a colossal failure of policy in the U.S. MacAvoy was one of the early outspoken critics of wellhead price controls, and he quite effectively buries that dead horse in this book. About half of the book involves the explication of an econometric model that MacAvoy uses as a simulation tool to estimate what price and quantities would have been in the absence of controls. While one could quibble with the specification and likely stability of the model, it serves a purpose (and would make a good case study for students to evaluate as a real-world application of econometric techniques.) Comparing the simulation results with actual prices and quantities produces MacAvoy's conclusion that the shortages induced by wellhead controls prior to the mid-1970s created losses to consumers and producers of $13 billion and $44 billion, respectively. When he examines the period of phased decontrol, perhaps the most complex and convoluted set of price controls ever introduced in any industry in the U.S., he finds that consumers lost an additional $4 billion due to high-priced gas purchases outweighing the benefits of cheap spot gas purchases, and that producers lost even greater amounts in aggregate.

This reviewer was less enthusiastic about MacAvoy's treatment of the liberalization of U.S. gas transportation markets since FERC Order No. 436 in 1985. His 22 pages on the subject includes a somewhat superficial review of how the industry and its regulatory oversight evolved to where it is today and how it became a model for electric-power-industry reform, as well. Via another regression model, MacAvoy attempts to estimate the gains and losses from continued pipeline regulation. In contrast to the model of wellhead prices and quantities, this reviewer found the pipeline model to be unconvincing. It attempts

to explain transportation prices (basis differentials) as a function of distance, an HHI measure of pipeline concentration, and the pipeline regulated tariff rate, among other variables. The collection of these variables is unlikely to capture the network dynamics of these markets, nor would it have predicted any of what happened to transportation prices to the California border last summer, for example. He draws a policy conclusion from his results that "with complete deregulation, industry performance would improve," but he never really explains what complete deregulation would involve. As we observed in 2000-2001 in California, under certain demand, supply, and storage inventory conditions the localized exercise of market power can lead to sustained high prices. If there is anything we have learned in the last few years in gas and power markets around the world, it is that industries with network cost characteristics can be susceptible to market power abuse in the absence of effective regulatory monitoring.

In his concluding comments, MacAvoy makes the statement that "there is no analytical foundation for the argument that transportation has to continue to be regulated because it is non-competitive." While this reviewer respectfully disagrees with this blanket statement, he also recognizes that bad regulation, as exemplified by the history of wellhead price controls, can lead to very inefficient industry performance. MacAvoy's book challenges us to continue to rethink the underlying bases for the regulatory systems we continue to apply to this and other network industries.

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