

## BOOK REVIEWS

*The Politics of Oil: Controlling Resources, Governing Markets and Creating Political Conflicts*, by Dag Harald Claes (Edward Elgar, 2018), 409 pages, ISBN: 978 1 785536 018 3.

An accomplished writer and leading expert in international relations, Dag Harald Claes brings his expertise to bear and provides readers with a captivating and accessible account of the history of global oil markets. This book tackles two of the most complex subjects in modern history—politics and oil—illustrating the vast array of political aspects that relate to international oil markets. To underscore the necessity for a rigorous, interdisciplinary approach to these tantalizing issues, the Preface begins with a direct quote from Albert Einstein. “When asked how it could be that the mind of man had discovered the structure of the atom, but was unable to devise political means to control it. [Einstein] replied: “It is because politics is more difficult than physics.” In the words of the author himself, the book is a “humble attempt to cover everything you should know about oil and politics.” In this regard it has succeeded, providing several critical insights to the current status of world oil markets.

Section one, Resource Governance, covers the role of governments and their sovereignty over oil resources. From the regulatory oversight of the supply chain to intricate geopolitical concerns such as the Resource Curse, the section begins with a simple question, “who can rightfully claim the benefits of natural resources like oil. In other words, who owns nature?” In answer the author provides an historical overview of resource rent from Riccardo to Hotelling and traces the evolution of the theory of property rights from the ‘Worldly Philosopher’ John Locke to the present day. Multifaceted issues such as sub-sea resources are addressed and simplified. (Heilbroner, 2020) To cite only one example: The generally recognized principle in international law is that natural resources “in the ground or under the seabed from the outset belongs to the state under whose territory or continental shelf the resources are found.” Yet many of the world’s offshore oil fields fall outside a State’s territorial waters and into waters otherwise covered by international law. (Trevisanut, 2020)

Claes shows us that the distribution of resource rights is as varied as the distribution of resource wealth itself. Three countries hold 46 percent of the world’s proven reserves and more than 80 percent of these are held by only 8 countries. There are only two countries in the world—the U.S. and Canada—where the property rights of private landowners include the right to explore and produce oil resources in the ground. Resources in the rest of the world, including over 80% of Canada’s oil resources, are governed by a ‘public governance system of oil resources.’ As a result, the governance of each oil producing country has its own unique system. Across this diverse array, there are some common features:

- (i) a comprehensive system for regulating the relationship between the state (owner and regulator) and the oil companies which explore for and produce oil;
- (ii) contract regimes, including concession agreements, production sharing agreements, and service agreements, and
- (iii) fiscal regimes dictating the means by which governments can capture economic rent from oil companies. These include signature bonuses, royalties, profit taxes and production sharing, and direct government participation.

This section would benefit from a discussion of intellectual property considerations and following Smith et al. (1993) technology transfer agreements could be added to this list.

Chapter 2, Governing Oil Production, begins with an overview of the economics of oil extraction. Claes begins the chapter with Harold Hotelling’s theory of exhaustible resources. The goal is to maximize the total profit of the oil asset. To achieve this goal, in a simplified world, the

price of oil must rise at the interest rate so that the profits from leaving the oil in the ground match the profits from extracting and selling the oil today and leaving the money in the bank. As summarized by Dahl (2015, p. 340), with a finite or fixed amount of oil to be sold and no operating costs, if “producers dynamically optimize in this simple model, market forces should cause prices to go up at the interest rate.”

Hotelling’s rule is predicated on several assumptions including the idea that the entire stock of oil must be non-renewable, exhaustible and known to the producers. This is a proposition that many economists suggest invalidates the applicability of Hotelling’s rule to international oil markets. In Adelman’s view, “The total minerals in the earth is an irrelevant non-binding constraint. If expected finding and development costs exceed the expected net revenues, investment dries up, and the industry disappears.” (Adelman, 1993a, p. 220) In Adelman’s alternative formulation the oil price is not a reliable indicator of scarcity of supply. Instead “the early warning signal of scarcity is a persistent rise in development costs and the in-ground value of oil reserves”. (Adelman, 1993a, p. 226) “‘Limited resources’ raise prices by forcing a persistent increase in marginal cost: the amount that must be newly invested to develop an additional barrel of reserves and capacity. We have seen that investment needed for an additional daily barrel of capacity fell, even with excessive allowance for the value of resources used up, over and above actual investment. But even had costs been rising, it would have had a long way to go before it could equal price and force it up.” (Adelman, 1995, p. 41)

Claes examines the evolution of oil prices and finds no clear evidence of scarcity of supply. Instead, he asserts the proposition that “a formal economic model, encompassing all relevant factors determining the optimal production level for each oil-producing country or company, is simply not attainable.” Production costs, reserves, prices, profits, competition, petroleum fiscal regimes, market psychology, institutional constraints and political factors are all dynamic variables. As a result, the industry is undergoing constant change. Economic models based on profit maximization in competitive markets fit the data quite well until 1973. After that point there is a structural change in the time series, perhaps reflecting a shift in market power from the international oil companies to OPEC.

The author then goes on to ask the next question. Who is controlling the exploration and production of oil reserves, and the complex relationship between government and oil companies? Once again, the search begins with a reference to John Locke, and his philosophy of *tabula rasa*, or the theory that man is born with a mind that is essentially a smooth or erased tablet. Data and the rules for processing data are added and developed solely by an individual’s sensory experiences. In the case of the oil industry, the “knowledge of anything related to exploration and production of oil is usually totally absent in the public administration, if not the country at large, when the oil is discovered.”

From here, Claes takes the reader through a fascinating exposition of the relationship between the international oil companies (IOCs) and host states, citing a number of theories including Raymond Vernon’s Obsolescing Bargaining Model (OBM). In the initial stages of a country’s development, the host country offers the IOCs attractive terms to attract foreign direct investment. As discoveries and large fixed investments are made, the host country gains the upper hand. From this point on the host country can increase taxation and impose greater restrictions on additional exploration and production efforts. For example, in the decades preceding the first oil price shock, the Transnational Corporations dominated negotiations and OPEC was “very modest in their demand for better terms with the companies . . . As market power changed, so did the domestic governance of oil production.” To illustrate these theories, the author ends the chapter with a detailed historical account of three distinct cases of production governance, Venezuela, Saudi Arabia and Norway.

In the years 1980 to 2006, the oil-producing developing countries were found to have witnessed lagging economic growth and lacklustre political development relative to their non-oil counterparts. Chapter 3, coauthored with Mads Motroen, examines this apparent ‘resource curse’—the proposition that “oil discoveries can turn out to be a curse rather than a blessing.” The authors

attempt to answer the questions: “How can wealth be detrimental to societal development? Does oil wealth really hamper growth and damage political institutions?” The chapter provides an overview of the direct economic effects of resource wealth including the implications from a sudden inflow of foreign currency known as the Dutch disease, fiscal policies concerning oil income, and intergenerational issues of sustainability. The discussion is strengthened by an examination of the adverse implications of the volatility of crude oil prices and ‘boom and bust’ revenues.

A number of solutions are examined including the use of futures markets to hedge against volatility in oil prices, the use of a currency peg to international oil prices, the application of Hartwick’s rule,<sup>1</sup> and the development of sovereign oil funds. The implications of oil wealth for political regimes—a ‘political resource curse’—are examined in considerable detail. Specifically, the authors examine the concept of a rentier state where revenues “generated by petroleum products can leave the state autonomous vis-à-vis the society without the need for taxation.” In the case of resource rich countries, the state can become the prime supplier of capital leading to corruption, rent seeking and the inefficient allocation of capital. These concepts are examined for three case studies, Venezuela (the rentier state), Saudi Arabia (monarchy), and Norway.

The chapter ends with a review of literature critical of the resource curse theory. “Closer scrutiny and improved statistical methods have uncovered several problems. As a result, serious scholars in the quantitative field no longer believe that there is a deterministic relationship between petroleum and a political or economic resource curse. In the final analysis, the authors find solid evidence for only three of the major resource curses hypothesis. Petroleum increases the durability of authoritarian governments, increases corruption, and can be a source of conflict in low- and middle-income countries. In the final analysis, “a nations ability to perform good governance over its oil sector will ultimately determine its ability to fight corruption and/or the resource curse.”

In the second part of the book, Claes focuses on the governance of world oil markets. From the world of John D. Rockefeller and Standard Oil, to the Seven Sisters and OPEC, the book takes a detailed look at past and present attempts to govern international oil markets. Once again, the author draws on a multidisciplinary approach, utilising the disciplines of International Relations (IR) and International Political Economy (IPE) to gain insight. The history of the institutions governing the oil industry—GATT, the WTO, the IEA, and the IEF—is examined in detail, leading to the conclusion that there is no single economic institution capable of taking full responsibility for the governance of the global energy industry. Instead, there is “patchwork of bargains, agreements and cooperation by sub-groups with common interests, partly or entirely in conflict with other sub-groups.” This situation, desirable or not, is expected to prevail.

The next two chapters document the increased complexity of interrelated actors, describing a ‘pentangle’ of interrelated actors including the IOCs, national oil companies (NOCs), including those for producer and consumer countries. The economic concepts of monopoly theory and cartel theory are used to illustrate two historical cases of how oil companies have been able to achieve almost total control over the oil market—Standard Oil in the U.S. from 1870 to 1880, and the Seven Sisters before and after WWII. Notable in this section is the discussion of the Texas Railroad Commission (TRC) as a “major inspiration for the members of OPEC.”

Remarkably, the main responsibility of the TRC has remained intact. The desire for stable oil prices in the wake of Covid 19 led to discussions invoking prorationing of Texas oil production volumes at the TRC conference on May 5, 2020. The proposal was rejected in a 2 to 1 vote leaving the decision to cut back to the Texas producing companies and competitive market forces. Still, fears of a second wave and prolonged economic shutdown have led to increased calls for the TRC to work in concert with OPEC Plus members on a longer-term strategy of global oil governance. (Chapa, 2020)

1. The Hartwick rule states that all profits or rents from exhaustible resources should be invested in reproducible capital such as machines. (Hartwick, 1977)

Chapter 6 is devoted entirely to a study of OPEC, and a discussion of the organizations ability to govern the international oil market. Claes does a wonderful job of covering the history of OPEC—from its meagre beginnings in Baghdad on September 14, 1960, to the use of oil as a political weapon during the embargo in 1973, the second oil price shock of 1979–80, the Iran-Iraq war and the creation of a unified price structure on October 29, 1981. The quota decisions of 1982–1984, Saudi Arabia’s role as swing producer and the shale oil revolution in the U.S., are all events that explicate the evolution of world oil markets to a more competitive—free market governing structure.

The suggestion that U.S. producers might take over the role of swing-producer from Saudi Arabia was found to be a myth. “They lack the essential instrument behind Saudi Arabian market power; the Kingdom’s spare production capacity. Furthermore, . . . Saudi Arabia is capable of centralized strategic thinking in the exercise of its market power.” The findings are consistent with results obtained by (Pierru, Smith and Zamrik, 2018) that OPEC’s spare capacity reduces oil price volatility and generates between \$170, and \$200 billion of annual economic benefits to the global economy. (Sieminski, 2020)

The lessons from this section include a detailed look at the Iran-Iraq war with striking similarities to current events foreshadowing an escalation of tensions in the Arab Gulf. The section ends with the cautionary note that “applying economic models of cartels in order to understand OPEC brings us only so far.” It is necessary to consider other factors including the exact “nature of the shock hitting the oil market.”

In the third and final part of the book, the author examines the complex issues of geopolitics and the role of oil in international political conflict. In the author’s words, this book “turns the table from looking at how politics influence oil, to how oil influences politics.” Once again, the author emphasises the need for a multidisciplinary perspective combining both economic and political techniques and models to analyse international oil markets.

Chapter 7 focuses on the issue of energy security and the role of the U.S. in the governance of world oil markets. Throughout the section, energy security is defined as “ensuring adequate reliable energy supplies at reasonable prices” and the U.S. is considered to be a hegemonic power that can “control conditions in almost any corner of the world.” Claes points out that the very act of defining an issue as a security issue implies that it might be treated as “an existential threat to a valued reference object, and to enable a call for urgent and exceptional measures to deal with the threat.” (Buzan, 2003, p. 491)

In the years prior to the oil crisis of the early 1970’s, there was a clear interrelationship between the position of the U.S. in global relations and the role of oil in enhancing U.S. political power. By the mid 1970s the U.S. control of the international oil market had been challenged by a number of factors including Watergate and the Vietnam War. The situation was complicated by the subsequent revolution in Iran and the U.S. invasion of Iraq in 2003. Issues such as the special relationship between the U.S. and Saudi Arabia, the use of oil as a weapon during the Arab-Israeli war of 1967 and the 1973 oil embargo, the Iraq war of 2003, the rise of the futures market and speculation in the oil industry and the shale revolution of 2008 are discussed in detail.

The conclusion—that the U.S. has lost hegemonic power while at the same time gaining energy independence from the Middle East—has several potential implications for the future of international energy politics. Specifically, the author discusses the idea that the United States might increase multilateralism or create a more isolationistic energy policy. He correctly points out the fact that the longevity of the U.S. shale revolution depends on the international oil price remaining above U.S. production costs. The Middle East producing nations retain the lowest crude oil production costs in the world, and as a result, control over the world’s oil markets. The U.S. is a “policy-taker in the international oil market, not a policy maker . . . and cannot fully control the Middle East.”

Chapter 8 discusses the issues of oil and regional security with a focus on the Middle East where, as mentioned above, production costs are a mere one tenth of crude oil production costs in the rest of the world. Claes poses the following question: “Can the possession of oil resources in-

crease the oil states security, or does it make it susceptible to more threats?" The answer is derived from an examination of two distinct interstate conflicts: the Iran-Iraq war (1980–1988) and the Iraqi invasion of Kuwait (1990). This is one of my favorite chapters and gives an excellent illustration of the complex interrelationships between oil and politics. To cite only one example: "At the Arab summit meeting in May 1990, Saddam argued that the continued violation of OPEC quotas by some Arab countries was equivalent to a declaration of war against Iraq." However, the evidence that oil creates conflict is hardly conclusive. While the presence of oil has been a constant in the Arab Gulf and an important factor in several conflicts, it is "hardly the cause itself. More nuanced approaches are required . . ."

Chapter 9 deals with the role of oil in domestic conflicts, investigating the contribution of oil resources to the "outbreak, intensity and duration of civil wars." A literature review finds that while the results are varied, there is some consensus that oil and conflict are related and that petroleum is consistently correlated with the onset of civil war, less democracy and more corruption. Once again, the time series illustrates a structural break in the data around the time of the first oil crisis. After the year 1970, energy wealth tends to increase the risk of civil war. Perhaps not surprisingly, it appears to be the scarcity of resource wealth, rather than supply, that triggers the conflict.

Oil is also found to create the motivation, funding, and a target for terrorist activities. A number of terrorist organizations are examined in detail, including Al-Qaeda and the Islamic States of Iraq and the Elvant (ISIS) where oil revenues reached a peak level of \$40 million USD a month in 2015. While oil undoubtedly plays a role in these terrorist and civil conflicts, Claes is not convinced of its predominance, and is "tempted to ask the rhetorical question—if oil is so important, how could there have been so much conflict in this region before oil was discovered?"

The author concludes with an in-depth look at the future of oil. Chapter 10 begins with a modern history of oil and its place in the global energy system. From modest beginnings in the 1850s—when biofuels such as wood and peat were the dominant forms of energy—to the industrial revolution, the deforestation of Europe, and the rise of coal, it took well over a century for oil to become the dominant energy source. At the present time global oil consumption is concentrated in the transportation sector and oil is the basis for more than 6,000 consumer products, and nearly all plastic products. Road transportation dominates, claiming 74% of oil consumption in 2016.

The implications of climate change and the Paris Agreement of 2015 are examined in detail. On this subject, Claes has several important insights, specifically on the roles of producers, consumers, financial investors and the volatility of oil prices. On the consumer side, he notes the importance of the transportation sector and electric vehicles. "If coal is used to generate the electricity used in electric vehicles, the emissions reduction from replacing the internal combustion engine with the electric engine is reduced and possibly lost."

Three 'producer' strategies are suggested that have the potential to meet the challenges posed by the Paris agreements: (1) Competitive Strategy—where oil producers reduce the price of oil in order to compete effectively with green alternatives; (2) Capitulation Strategy—where the producing countries try to gain as much oil rent as possible by dumping oil on world markets; and (3) Change-over Strategy—where resources are channeled into alternative industries.

On the investor side, investments in green energy increased "six-fold" from 2004 to 2016. These are promising results, but 'success' will ultimately depend on the evolution of political incentives, and the ever-changing level of oil prices. Refusing to make even a "cautious" prediction concerning the future of oil and the great energy transition, the author points to complexities involved in the transition and the need for transformation to take place on a global scale. This section could benefit from a discussion of the potential implications, if any, of the next phase that the industry is moving into, abandonment and decommissioning.

In summary, *The Politics of Oil* is a fascinating and informative study of the evolution of the international oil industry. The work profits from the authors' interdisciplinary approach, which draws heavily on a number of fields including but by no means limited to geology, engineering, eco-

nomics, philosophy, history and political science. The chapters are filled with a wealth of valuable information and insights on many of the pressing issues of our time: From climate change and the potential producer response to the resurgence of Iranian ambitions in the Gulf. To my knowledge, this is the only work of its kind providing a bridge between political and economic approaches to complex geopolitical issues such as the resource curse. It is readily accessible to the general reader interested in oil and politics. All the chapters can serve as supplementary material to academic courses in energy economics geopolitics and energy transitions.

It can be considered essential reading to those studying the evolution of international oil markets. Recent developments such as the Covid demand shock and Russian-Saudi oil price war are staunch reminders that those who do not learn the lessons of history are destined to repeat it. In the words of Senator Keating, “Khrushchev has threatened to bury us on more than one occasion. It is now becoming increasingly evident that he would also like to drown us in a sea of oil, if we let him get away with it. If these tactics continue to succeed, there is danger that Western countries will become increasingly dependent on Soviet oil supplies for vital defense as well as industrial activities. The danger such a situation would pose to the security of the free world cannot be over-stated.”

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***The Goldilocks Policy: The Basis for a Grand Energy Bargain***, by John R. Fanchi (World Scientific, 2019), 215 pages, ISBN 978-981-3277-44-1.

Professor Fanchi has a long career that began with his Ph.D. in physics and evolved into many years in petroleum engineering and related fields. Having taught previously at the Colorado School of Mines, he is currently a professor of engineering and a leader in the Energy Institute at Texas Christian University. He is the author of many works in physics and energy.

In *The Goldilocks Policy*, Fanchi lays out the case for a reasonable policy to transition away from fossil fuels over many decades. He is concerned that the progressive agenda, in its calls for a rapid end to fossil fuels, is too radical and costly. The agenda calls for an energy czar to dictate how energy will be produced and used. High emission fuels, coal especially, are on the high-speed chopping block under that policy. Costs are irrelevant in that view as we are in a race to save the planet and, besides, paying people to install solar panels generates wealth, not just costs, in their way of thinking. On the other end are the non-interventionists who want little public policy while allowing the market determine what energy resources are used. Like Goldilocks, Fanchi advocates a policy that is neither too small nor too large. We want to avoid the consequences of major climate change but must be sensitive to the costs of rapid abandonment of fossil fuels that dominate the energy system today.

The first third of this short book is an excellent review of the history of energy sources and use. It also explains the different kinds of energy. Fanchi's review is neutral and informative with helpful charts and tables. This section of the book is an excellent primer for students or anyone else interested in an accessible survey of the energy landscape.

Fanchi then, in a similar dispassionate and readable manner, explains the climate change evidence and debate. He lays out the science of greenhouse gasses and explains how these are interpreted by various parties. The discussion is evenhanded and is not an advocacy piece stretching the evidence to fit his personal beliefs. He lays out the conclusions of the International Panel of Climate Change (IPCC) and of the Nongovernmental International Panel of Climate Change (NIPCC), which are different on key issues. While the IPCC sees fossil fuels as the main culprit, the NIPCC sees population growth and concomitant energy growth as the key concern. The two are intertwined, but Fanchi explains why there are differences in concerns as the earth's population will continue to rise for several decades at a minimum.

The text also covers other theories of what may cause global cooling and glaciation periods, such as Milankovitch cycles of the relationship of the earth to the sun over long periods. The conclusion I came to about climate change is that the matter is not "settled" as scientific hypotheses cannot be "proven," but Fanchi believes action needs to be taken to reduce GHG emissions as the results from global temperature change would be devastating. Mean temperature changes of only a few degrees means the difference between massive glaciation and movement in the opposite direction.

Besides the science, which includes a nice discussion of the use of Vostok ice core data to show the relationship between GHGs and temperature swings over many thousands of years, Fanchi summarizes some of the political-populist policy discussion, including never-ending doomsayers such as Paul Ehrlich to those taking less draconian views of the matter.

After reviewing relevant evidence, Fanchi advocates a moderate policy of reducing fossil fuels by two percent per year so the weaning is gradual, not a financially debilitating change that would come from the heavy-handed, economically destructive proposals as we hear about in the New Green Deal and such "too big" policy changes. Where does the two percent per year reduction idea come from? Fanchi explains that change from coal to oil as the dominant energy source was a long process. That is true but comparisons to earlier times may not be instructive as technology today is very different than in 1900 when the shift from coal to oil began. And mandating a prescribed rate of transition by policy differs from an incremental market-driven shift.

When John Kerry was Secretary of State in the Obama administration, he noted that “If all the industrial nations went down to zero emissions ... it wouldn’t be enough, not when more than 65 percent of the world’s carbon pollution comes from the developing world” (Fanchi, p. 60). The primary culprit is, of course, China, where increases in emissions swamp the decline in the United States. Fanchi explains the explosive GHG increase from China but does not hypothesize how we would get it to agree to two percent a year emission cuts. Economists point out that it is not in the best interest of China, or any other developing nation, to cut emissions in favor of lower economic growth and more costly sources of energy. The benefits of lower emissions are global, they are not all captured by the country that bears the cost of moving to new energy sources.

In addition to the strategic considerations, when people are very poor, worries about costs of climate change accruing decades in the future is a minor matter. Millions of women and children die annually as a result of indoor air pollution (WHO 2018). The health benefit to these people from coal-fired electricity to provide them clean cooking energy would be immense. As Fanchi notes (p. 12) electricity use is strongly correlated with quality of life. The UN’s Human Development Index is low in countries with low levels of energy. Low levels of energy did not cause poverty and misery, but all people can see the benefits of more electricity and advanced forms of transportation. Rich countries can afford higher cost fuels, but poor countries, where billions live, are likely to go for the biggest bang for the buck, which may be a relatively cheap source of power, such as coal.

The main thing missing in the book is a discussion of the cost of alternative energy sources. Fanchi appears to accept the fact that nuclear energy is off the table for political reasons in much of the world, so the focus is likely on wind and solar sources. While those sources have become less costly over time as technology has improved, is it likely that they can increase from the pittance they now contribute to global energy to a level that causes a serious dent in fossil fuel use? Discussion in the book would benefit from coverage of the costs of blending renewables into the existing grid. It is not a simple matter to have multiple energy inputs and very costly transmission systems must be constructed to handle energy flows, such as from Texas panhandle windfarms to Florida electricity users.

Fanchi understands the complex factors at work in energy policy. He devotes a good bit of space to historical developments and characters—Marxism, socialism, the Rockefellers, and others. His discussion of key individuals and institutions is historically accurate, readable, and unbiased. But it does not provide him, or the rest of us, an answer to the key question of, can we move away from fossil fuels, even at a “just right” policy of two percent a year, and not suffer serious economic losses?

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