7 Firms in Firmament: Hydrocarbons and the Circulation of Power

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I can add colours to the chameleon,
Change shapes with Proteus for advantages,
And set the murderous Machiavel to school.
Richard III, William Shakespeare, *Henry VI, Part Three*, III.ii

Power inheres in the markets for hydrocarbons: natural gas and oil. The extraction, transit, sale, and price of hydrocarbons all create geopolitical moments in which agents may exercise control over one another or create new modes of interaction.

Firms extract hydrocarbons from beneath us. Some of these firms are minuscule beasts, privately owned with a handful of technicians and a drilling rig or two. Others are leviathans that employ hundreds of thousands and have varied owners that often include states. The vast majority of these large firms do business across national borders. When they produce outside their home nations, firms rely on institutional environments and often complex contractual arrangements designed to manage their calculable risks of cost and price. Firms that produce at home and sell abroad face symmetrical risks. Governments are ever-present in these markets. Are the firms the masters of the governments, or is it the other way around? Such is a common, but ultimately unanswerable, question.

Governments covet the gas and oil that rest untapped beneath the territories and waters of other nations. That covetousness always results in politicking over the pipelines and shipping lanes through which hydrocarbons are supplied; and sometimes it leads to war. Control over routes can be used to coerce, though it is more often a tool of influence, the subtle reshaping of domestic coalitions and national policy preferences.[2]

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[2] Hirschman [1945] 1980; Abdelal and Kirshner 1999/2000.

Whose power is greater: the government that controls the supply or that which controls the transit? Thus is posed another hopeless question about hydrocarbons and power.

The price of the hydrocarbons affects very nearly everyone. Oil is traded on markets that are essentially global. Already liquid, and thus easy to move from where it is buried to where it is burned, oil is a commodity that comes close to having a single world price. With the notable exceptions of financial market expectations and radical uncertainty about geopolitical supply disruptions, the price of oil results primarily from the intersection of supply and demand. Only a few firms are capable of influencing the price of oil by restricting or expanding supply when they cooperate within the context of the Organization of the Petroleum Exporting Countries (OPEC). One firm, the Saudi Arabian Oil Company, commonly known as Aramco, has sometimes done so on its own.

The price of natural gas is another matter altogether. Naturally occurring in a gaseous state, and expensive to liquefy, natural gas is sold on markets that are local, regional, and global. In the densely pipelined United States, gas is traded on spot prices. So it is in a few gas trading hubs around the world. Liquefied gas can, like oil, travel by ship to the highest bidder. For the most part, however, gas travels from source to consumer through a pipeline that allows for no diversion; the prices for piped gas have generally been determined by complex formulae agreed upon by suppliers and consumers. Until recently those formulae relied extensively on the oil price as the most important reference in an index. Supply shocks – such as the US unconventional oil and gas revolution – and demand shocks – like the pan-European recession and the slowdown of Chinese growth – both influence price. There is, to be sure, power in those prices. Whose is it? Over whom? And to do what? The simpler questions obscure the differences between multiple forms of power that interact.

In this chapter I explore the character of protean and control power in hydrocarbon markets. I first describe the relationships among firms, among states, and between firms and states as constitutive of what we ultimately interpret as markets. In these relationships we find both protean and control power. Then, I narrate briefly four cases that illuminate the effects of protean and control power in hydrocarbon markets: the European–Russian gas relationship over several decades; the geopolitical consequences of the US unconventional revolution; the Sino-Russian energy rapprochement; and the effects on Russia of the sudden, rapid, unintended, largely unanticipated decline in the price of oil amidst the Ukrainian geopolitical crisis. I conclude with some reflections on the

paradox that the particularities of natural gas markets render them ostensibly susceptible to control power, whereas in fact protean power is their defining feature.

The Circulation of Power in Hydrocarbon Markets

The participants in hydrocarbon markets experience, promulgate, deploy, and embody power, both dominating and shape-changing. Seybert and Katzenstein (Chapter 1, p. 16) distinguish between two different instantiations of power: between the possibility to "exercise 'power over' (understood here as actual capability) the human or non-human world . . .," and the fact of being "empowered to have 'power to' (understood here as the capacity to actualize potentialities) navigate in that world successfully." Many scholars and practitioners recognize control power in hydrocarbon markets, but the most interesting, consequential outcomes and practices result from the interaction of control and protean power. Power circulates across these ways of being, of seeing, and of doing.

The interplay of these forms of power defines the relationships among states and firms, the transit of hydrocarbon supply to its demand, and the formation of prices. As is true of finance (Chapter 8), hydrocarbon markets comprise moments of probabilistic risk and both radical and operational uncertainty. Firms generally try to write contracts to manage the risks that they estimate. When faced with uncertainty, however, those same firms rely on the depth of their relationships, on trust and habits of thought, and on improvisation to reshape the institutional contexts within which they manage.[3] Technological change in the industry may sometimes seem endogenous, but in fact such change results largely from firms taking seemingly calculated risks that collectively create uncertainty about supply and price. Risk-based behavior leads to systemic uncertainty and unpredictability. Thus, these markets are characterized by elements of both risk and uncertainty. And firms experience both the riskiness and uncertainty as they alternately acquiesce or refuse, improvise or innovate.

Firms and States

The scholarly literature on political economy is composed in part of several enduring debates about the balance between public and private power. In comparative political economy, scholars have interrogated the influence of firms on states. Although political lobbying and regulatory

[3] Herrigel 2010.

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capture are phenomena that describe the intentionality of firms, some scholars have identified ways in which the control of firms over political outcomes is pervasive in practice and inherent to the structure of modern capitalist systems. Thus, the structural power of business might rest upon automatic processes in addition to intentionality.[4]

For scholars of international political economy, systemic questions have been preoccupying. Cross-border markets for, say, capital are thought by some to have transcended the authority of nation-states, though others insist that states retain both autonomy from and influence over such markets.[5] Multinational firms might have become more powerful than the governments that created the very possibility of their incorporation, or perhaps instead the states are still masters of the firms.[6]

The implicit and explicit understandings of power that inform these enduring debates have allowed scholars to answer some important questions about the power of one set of agents over another at different moments in varied contexts. The idea of control power is the very basis for the questions that have been asked: power over; higher or lower; and so on. We find those who dominate and others who acquiesce and submit. Control power, in this conception, is an attribute of an agent.

Yet the power that one finds in these relationships is more mutable and multidimensional. It is not merely that the dominant and the submissive switch roles regularly depending on the moment or the issue at hand, though that is true. In fact, power is constantly being renegotiated through acts of creativity and agency. The firms and governments have interests in accomplishing or experiencing outcomes – power to do this or that thing – that often have little to do with insisting or relenting relative to one another. Protean power here is oblique: it is about the effects of unanticipated innovations by agents, innovations that disrupt the practices of control power and unsettle agents' understanding of risk and uncertainty. An understanding of protean power uncovers heretofore obscured elements of the relationships between firms and states in hydrocarbon markets.

Firms also have relationships with one another – relationships of great political consequence and considerable variability.[7] These relationships are, however, almost completely absent from the scholarly literatures on comparative and international political economy. Power circulates among firms as well in a system that is intertwined with the system of states. The managers of energy firms would not recognize the power

[4] Lindblom 1977; Culpepper 2011; Culpepper and Reinke 2014. [5] Abdelal 2007.
[6] This is one of the classic questions of international political economy. See Vernon 1971; Gilpin 1975; Krasner 1978. See also Baldwin 1989.
[7] Abdelal 2015.

dynamics between them as involving or implicating control only. For the firms, power is also protean. Basically, they cannot do without one another, and the formal and informal elements of their relationships are in a state of constant renegotiation. Protean power is the effect of firms' improvisation and innovation as circumstances – and their relationships – evolve in unpredictable, often unknowable, ways.

In these relationships between and among states and firms we find many moments of improvisation. Both the private and public agents – executives and policymakers – tend to believe about the other that there exists a plan with calculable probabilities. But what they believe about themselves is usually the reverse: that they are all at sea, and that their successes are based more on adaptability than foresight. Machiavelli's arguments about *fortuna* and *virtù* reflect these intuitions. If *fortuna* is responsible for half of our actions, then we are left only the other half. And *virtù* defines our ability to improvise and adapt.[8] Machiavelli himself understood power as protean – chameleon-coloring, shape-changing, improvisational – even if Shakespeare's "Machiavel" in *Henry VI* was supposed to be outdone by Richard III. As the political theorist Richard Clegg astutely observes, for Machiavelli any inquiry into power is necessarily ethnographic. Power, in Machiavelli's analysis, is an effect: it is tenuously produced and reproduced as a result of the competencies of agents, rather than merely as a resource that inheres in them. Power is thus to be revealed in the networking of relations among agents.[9]

Whereas risk requires an understanding of probability and decision-making, uncertainty creates, in contrast, a premium on judgment. At the highest levels, executives and policymakers know that technique will bring them only so far. Models and forecasts bring them to the moment when judgment must be exercised, where empathy and intuition must be employed. At that moment, a sense of history, a coherent worldview, and the competence of recognizing patterns are critical. The micro-foundation of this theory of practice is an agency attenuated by an environment of dense, intertwining relationships, as Chris Reus-Smit also shows in the case of human rights (Chapter 3). These agents know that they do not know what they do not know about their environment; they recognize the elements of uncertainty that persist and recur in their market environments. They plan with a language of scenarios of possible futures, rather than of prediction and calculation. Good judgment – coupled with a sense of timing – is not a resource, but a practice.

Thus, the relationships that are the essence of any market are, like all relationships, in a state of constant renegotiation. Nothing ever gets

[8] Machiavelli [1513/32]1998, ch. XXV. [9] Clegg 1989, chs. 1 and 2.

settled once-and-for all. No one always wins, and no one loses forever. The moments of *Veni, vidi, vici* are passing fantasy. Instead, *Luctor et emergo*: I struggle and emerge. Or, perhaps even more accurately: We struggle and emerge.

A holistic understanding of hydrocarbon markets – and of the circulation of power among firms and states – offers insight into flows of capital. Regardless of the ownership structures of firms in hydrocarbon-exporting nations, their governments rely on receipts in the forms of corporate income, dividends, and tax receipts. The firms and governments of hydrocarbon-importing nations depend on the flows of energy resources to generate the power that underpins output growth. Leaders of exporting nations express concern over the security of demand for their resources, demand that is essential for the fiscal health of the state. In importing nations, however, the security of supply – usually called energy security as shorthand – is the greater risk.

Supply and Transit

Thus is the transit of energy resources the vasculature of hydrocarbon markets. The vast majority of the world's oil is transported by ship. A small, but growing share of the world's natural gas is liquefied and shipped in the same way. Exporters and importers rely therefore on the openness and safety of the world's sea lanes, sometimes called the sea lines of communication. Once under the control of the British, the sea lanes are now maintained largely by the US Navy – a form of control power based on the management of risk. The US government has used its naval predominance to restrict the supply of hydrocarbons to adversaries during war – a practice that reached the height of its effectiveness during the Second World War when Japan was deprived of oil.[10]

The US approach to energy markets and energy security informs the nation's approach to military power. The United States has traditionally not, for example, purchased a significant proportion of its imported oil from the hydrocarbon-rich states of the Persian Gulf. So its military presence in the region, often mistakenly attributed to its direct interest in oil, derives in part from the US interest in the continued flow of oil onto the world's markets.

The United States similarly does not rely on all of these sea lanes for the transit of its own oil imports. So the US blue-water naval presence has not tended to protect directly its own supply. Instead, the United States seeks to maintain sea lanes because of a long-held, poorly defined, but

[10] Barnhart 1987.

preference-revealed approach to energy security. For US practice, energy security is maintained by the liquidity of global markets, on which importers may buy as much as they wish at whatever price happens to prevail.

The Japanese wartime and global postwar lessons are apparent to Chinese policymakers. In the long run, the Chinese government expects its own blue-water navy to challenge US predominance, at least in Asia. For now, however, some 80 percent of Chinese oil imports transit the Straits of Malacca, which are controlled largely by the US Navy and, otherwise, by pirates. Chinese energy firms have, with the strong encouragement of the military establishment, purchased equity stakes in oil fields around the world, including in Africa.[11] This improvisation is to ensure the nation's access to hydrocarbon resources, though whether such a tactic would provide insurance in the case of an all-out naval blockade is doubtful.

The transit of natural gas is far more intimate, for the pipelines cross the territories – and occasionally territorial waters – of sovereign states. The oil politics are largely global; the gas politics are local. Transit states are the middlemen in these producer–consumer relationships: the delivery services essential to the commerce of natural gas. Transit states are always themselves consumers of natural gas, and occasionally they provide their services in exchange for the gas supplies they require. Much more often, however, transit states provide delivery for a fee and pay cash for the gas they consume – the prices for both are subject to negotiation. While in transit, the gas is owned, if not controlled, by the seller. Such an arrangement, as in the varying routes taken by illegal migrants, creates opportunities for fascinating struggles of money, influence, and security (Chapter 5).

Price

Oil has a single price.[12] That price metaphorically pulls the oil from the ground. A high price pulls more; a lower price implies a softer tug. Yes, there are financial market participants who speculate on future prices and thus affect them moment by moment. Overall, though, the oil markets deliver to us a wonderfully simple formula: supply and demand. The demand is not under the control of anyone in particular. The supply, on the other hand, is in the hands of only a few. The challenge of coordinating supply changes, however, has most often proved to be a collective

[11] Downs 2000; Taylor 2014; Zhao 2014.

[12] This is basically so. Oil comes onto the market in different grades (heavy or light, sweet or sour) that are not altogether fungible because refineries differ in their capabilities to manage them.

action problem beyond the capabilities of an old, yet still inchoate organization.[13] And supply and demand move in an uneven rhythm of time, since high oil prices invite capital investment that may take several years to come to fruition, by which time the price may have declined just at a moment of burgeoning supply.

Natural gas has, in contrast, a great many prices. One prevails in the liquid, but self-contained, market of North America. Still another, higher price emerges from the fragmented market of Europe. The Asians pay the most. The markets thus are regionalized. Whereas oil is pulled, gas is pushed and relationship-laden.

Consumers of imported gas do not receive the price they deserve; they receive the price they negotiate. Industry practice for fifty or so years was to use the price of oil as the starting point for negotiating the formula for the price of piped gas. In part, this was done to ensure that gas would remain competitive with fuel oil, its closest substitute as gas-powered electricity generation became widespread.

The more important reason for the practice, however, was that gas markets were not very market-like. That is, a natural gas contract commonly involved bringing the molecules from a starting point in an exporting nation through a pipe to an ending point in an importing nation; the pipeline did not serve other nations, and gas could not somehow travel elsewhere. The gas either entered the pipe destined for a single destination, or it did not. So: a market with perhaps only two participants.

And from what might a price emerge in a market with only a monopolist and a monopsonist? Either the monopolist and monopsonist could abuse one another during each passing moment of bargaining position. Or, as it turns out, the two parties could agree to avoid any such thing by settling instead on the price of something else, which itself is formed through the daily interactions of thousands of buyers and dozens of sellers.

So the prices of natural gas would vary with the price of oil, with further influence from the density of pipeline networks and the relationships between the firms that transacted with one another. As more and more pipelines were built, and balancing markets for a few billion cubic meters here or there evolved into more liquid trading hubs, over just the last few years the markets for natural gas have begun to incorporate the spot prices for gas into formulae at the expense of the long-standing practice of the oil index.

The transition from oil to spot-price indexation has introduced some of the simpler dynamics of oil prices, in which exporters may influence price

[13] See, for example, Spar 1994.

through unilateral or coordinated adjustments in supply.[14] And this transition itself introduced an era of intense, complex negotiation over the composition of the formulae for gas price formation. Firms have created new practices and contract structures in ways that affect both their influence over one another and the fortunes and fates of the nations in which they are based.

Stories

Four stories reveal the interplay of control and protean power in the markets for hydrocarbons.

Gas, Red

First is the story of how a handful of European firms went to Moscow at the height of the Cold War to negotiate one of the most historically significant – and fateful – natural gas deals of the last century with the Soviet gas ministry.[15] US policymakers opposed the European–Soviet gas relationship then and in the decades that followed for fear of Soviet manipulation of and coziness with European allies. US control power was employed – unsuccessfully – to undermine or thwart the deal.[16]

Yet the relationship flourished. Soviet and European managers came over time to trust one another. As the Soviet Union collapsed, all of these agents were obliged to recast their relationships with one another. The Soviet gas ministry evolved into the Russian firm Gazprom. The pipeline route that had once spanned a single Soviet state and a handful of Warsaw Pact nations on its way to European markets was transformed into a complex maze of pipelines that crossed multiple sovereign territories.[17] Possibilities for the exercise of control power were ever-present and almost never undertaken.

A newly post-Soviet Ukraine emerged as the most important supplier to Gazprom: of the transit of gas, with some 80–90 percent of Russian gas contracted to European customers traversing its borders. Building on decades worth of trust, European firms continued to do business with Gazprom, which was left with the problem of managing its new relationship with Naftogaz Ukrainy, the firm responsible for the Ukrainian pipeline infrastructure.

Even as gas crises flared in 2006 and 2009, European firms continued to believe that Gazprom was a reliable partner.[18] Operational uncertainty

[14] Stern and Rogers 2012; Mitrova, Kulagin, and Galkina 2015. [15] Högselius 2013.
[16] Jentleson 1986. [17] Abdelal, Jorov, and Tarontsi 2008a.
[18] Abdelal, Jorov, and Tarontsi 2008b: 2008c.

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over the sources of the supply disruptions required firms to interpret and ultimately judge competing narratives. The gas crises resulted from contractual disputes between Gazprom and Naftogaz Ukrainy. The most contentious issues were the fees Naftogaz would charge Gazprom for transit and the price Gazprom would charge Naftogaz for the gas volumes Ukraine consumed. For much of the 1990s, the transit fees and gas prices were contractually linked: each was below the rates that prevailed in western Europe. The value of the transit discount enjoyed by Gazprom was worth much less than the gas discount Naftogaz received.

During spring 2005, some months after the Orange Revolution of late autumn/early winter 2004 brought a pro-Western regime to Kiev, Naftogaz and Gazprom undertook a new round of their yearly negotiations.[19] (Their contracts concluded on 1 January of each new year.) Naftogaz proposed that Gazprom pay for transit at rates comparable to those in the West. Gazprom responded that Naftogaz should also then pay gas prices that prevailed elsewhere, thus bringing to an end the discounts that each had offered the other. Naftogaz refused, for Ukraine could ill afford the higher price for the significant volumes the nation consumed. Having reached a stalemate in the negotiations, 10.00AM on January 1, 2006 found Naftogaz and Gazprom out of contract.

As Gazprom compressed and shipped the amount of gas for which its European customers had paid, it also cut the shipment of gas intended for Ukraine's consumption. Not all of the Europe-bound gas made it through the Ukrainian pipeline. Naftogaz accused Gazprom of exercising crude control power as putative punishment for the nation's Western geopolitical ambitions. Gazprom accused Naftogaz of theft and argued that Ukraine would not be shipped gas until a new contract were signed. Naftogaz, Gazprom suggested, was also exercising control power in the form of extortion, by taking advantage of the nation's near-monopoly of transit.

A similar contractual dispute during spring and autumn 2008 led to an even more dramatic breakdown of the Naftogaz–Gazprom relationship in January 2009. Gazprom's European customers were left with an interpretive puzzle. They could have decided that Ukrainian transit was untrustworthy, that Russian supply was undependable, or that persistent discord between Russia and Ukraine rendered the ascription of guilt moot.

Such was their trust in Russian supply that the solution of the major European energy firms to the problem of Ukrainian transit was to disintermediate Ukraine with new pipelines.[20] The most important of these

[19] A fuller recounting of this episode can be found in Abdelal 2013.
[20] Abdelal and Tarontsi 2011a; 2011b.

was the Nord Stream pipeline, a major innovation to the existing system. Long touted by both European and Russian executives as a solution to potential supply disruptions by contentious transit negotiations, the northern pipeline route was pushed along toward completion by the gas crises. Although US policymakers were disappointed, and central European policymakers were downright alarmed, the northern route reshaped the geopolitics of the region.[21] A new proposed route to Ukraine's south, the South Stream pipeline, would, if it had come to fruition, almost fully disintermediated Ukraine. Both Nord Stream and South Stream were joint European–Russian projects. The Nord Stream consortium comprised Gazprom, E.ON, BASF, Gasunie, and, eventually, GDF SUEZ. The South Stream consortium was composed of Gazprom, ENI, and Électricité de France. Ukraine was left in the cold.

In the complex relationship between Gazprom, Naftogaz Ukrainy, and European energy companies, many US policymakers and scholars saw only control power. Either Russia was punishing Ukraine, or Ukraine was extorting Russia, or Russia was threatening Europe. A much more subtle protean power was, however, evident. Rather than a desperate Ukraine and a gas-hungry, dependent Europe, Russian and European energy executives recognized their mutual dependence, the geopolitical and contractual uncertainties of the Ukrainian transit route, and their joint innovative potential to reshape the transit of gas. In the language of this volume, this innovation was a response to a thoroughgoing uncertainty that, so it seemed, demanded more of them than mere improvisation.[22]

The story was thus not primarily one of an agent's exercise of power over another. Instead, multiple agents, which in some ways were constituted by their relationships among one another, creatively found ways to manage their production and consumption dealings – an iterative, protean power that resulted from the underlying uncertainty of the context and the agents' experience of that uncertainty. The result came largely at Ukraine's geopolitical and commercial expense, but even in the Russian–Ukrainian relationship the control power of each over the other failed miserably to deliver any outcome either desired. Russia failed to pull Ukraine decisively toward Eurasia; Ukraine's monopsony gambit failed disastrously. The innovation for which Ukrainian leaders had hoped became merely refusal; Russian leaders' efforts toward Ukrainian acquiescence brought frustration and disappointment. Both sides discovered that when control power failed them, the ground beneath them nevertheless shifted enough to create a landscape that was unfamiliar and undesirable to each.

[21] Abdelal 2013. [22] Abdelal 2015.

Gas, Red, White, and Blue

American exceptionalism is mostly mythological, except for the unconventional hydrocarbon revolution. That revolution has been and will likely remain an exception in its scale and influence. In just the last few years the United States has become one of the largest oil and natural gas producers in the world. The prospect of hydrocarbon self-sufficiency may fundamentally alter patterns of geopolitics, and in a number of ways the unconventional revolution has already done so.

The unconventional revolution was not, however, the result of conscious US policy. The mix of agents, norms, and institutions was exquisitely American. Partly it is a simple story of discontinuous technological change. American firms had known for decades that bountiful natural gas supplies lay within shale rock formations. There was little point in counting up those billions of cubic meters, for no one could really get to them – not until a handful of small firms pioneered the combination of using water to fracture (to frack, that is) the shale and horizontal drilling to extract the gas and, later, oil. The technology was not so fancy. True, the crews with the knowledge and experience to operate the drilling rigs were in desperately short supply. There were not even enough rigs to go around the United States, much less the world. Those remained manageable challenges in the medium run for any nation.

What could not be easily replicated, however, was the peculiar combination of features that defined the US revolution, including the hundreds of small, entrepreneurial energy firms willing to take bet-the-company decisions repeatedly; the vast expanses of sparsely populated territory under which many of the largest shale gas deposits sit; a dense, capacious pipeline network that can bring the gas practically anywhere within the country's borders; and a societal willingness to drill hundreds of thousands of holes (the activity is much more drilling-intensive than conventional oil and gas development) in the earth's crust to get at the resources. Another important institutional arrangement is the subsoil property rights regime, within which, for example, a farmer whose land sits atop shale reserves can sell or lease drilling rights thousands of meters beneath the earth. And, finally, a permissive regulatory environment that has largely required opponents of hydraulic fracturing to prove its dangers, rather than the other way around, as in Europe, where many citizens are mystified that the fracturers did not have first to prove the safety of the practice before regulators allowed it.

The irony is particularly acute for the US government, which tried and failed for forty years to achieve energy independence with a series of ill-fated public policy schemes based on control power. The government

sought to exercise control power over its energy market by allowing more drilling for resources, drilling for resources in precarious habitats, subsidizing renewables, and promoting efficiency and conservation. Yet it was innovation in the face of uncertainty, largely uncoordinated, and accomplished by small, under-capitalized firms ignored by the majors that in the end delivered energy self-sufficiency to the United States.

The oil from the unconventional revolution made its way onto global markets and affected their overall supply. Still, US firms are profitable, depending on the basin, only at prices of $45–60 per barrel, and they faced their own uncertain future as oil prices plummeted during 2014 and 2015.

In order to make its way onto world markets, however, US unconventional gas would first need to be liquefied, and then, as with oil, a firm must apply for and receive a license to export. A few licenses have been granted, and some liquefaction facilities are in construction. Thus far, only a few cubic meters of liquefied natural gas have left the shores of the United States, yet the consequences for natural gas markets have already been felt around the world.

Plummeting US natural gas prices and abundant domestic supply led to the diversion of theretofore anticipated liquefied gas deliveries to elsewhere in the world. A collapse in US coal prices led to the export of incredibly inexpensive coal. Combined with a pan-European recession and new liquid gas trading hubs, European energy firms in particular found themselves paying – for the first time – higher prices for piped gas than for spot-market or liquefied gas.[23]

This created a new era of operational uncertainty for both European firms and their suppliers, Gazprom in particular. Would the United States export natural gas in significant quantities? For how long would spot prices stay below oil-indexed prices? Before the recent declines in the price of oil, oil-indexed gas had become relatively expensive.

Europeans proposed two major improvised revisions in their contract structures with major pipeline-gas suppliers. The first was to index the price of piped gas to the spot prices of natural gas, rather than the spot prices of fuel oil. The second was to reduce the role of the so-called take-or-pay clause. With take-or-pay, the customer commits many years in advance to purchase minimum annual quantities of gas: the firm can buy more than that commitment, but not less. This clause provided a kind of security to the customer, since the commitment was bilateral: the producer also was obliged to sell at least that much to its customer at the price delivered by the index, even if, at that moment, there might be a better

[23] Abdelal, Maugeri, and Tarontsi 2014.

price to be found elsewhere. There was also security of demand for the producer, since the exporting firm could count on a predictable stream of revenues.

Exercising their leverage over Gazprom, and out of desperation, European firms managed to undertake several years of renegotiation with suppliers. Another energy crisis thereby revealed the protean nature of power in these hydrocarbon markets. The firms were not engaged in risk-based, arm's-length contract negotiations in which their knowledge and power delivered an outcome. Instead, all the parties were at sea, unsure of how difficult the market environment would become for either of them, yet still embedded in decades-long relationships. Those renegotiations temporarily saved the balance sheets of the European firms at the expense of those of the suppliers. Gazprom, thoroughly dependent on the European market for most of its revenues and essentially all of its profits, suffered most of all from the new contract structures.

One consequence, however, of the arrangement was that the new contract provisions provided little incentive for Gazprom to continue to build pipeline infrastructure to Europe. A contractual arrangement in which European firms offered to purchase whatever amount of gas they needed at whatever price happened to prevail pushed the responsibility for infrastructure development away from Gazprom, which would not be able to rely on a stream of well-understood, if still variable, revenues. Without such a revenue stream, Gazprom and its European partners might not be able even to find financial backing for the project from the banks that usually undertake project finance.

Gazprom's response was, in part, the cancellation of its South Stream pipeline project, which had been a joint Italian–Russian plan to bring gas across the Black Sea. Instead, a joint Turkish–Russian project, Turkish Stream, became Gazprom's preferred route for bringing its gas to a growing Turkish market and near enough to Greece so that the Europeans, at the presumably inevitable end of their macro-economic crisis, might be able to build pipelines to collect it at the Turkish border.[24] Thus, the Turkish–Russian protean reorganization of the eventual supply infrastructure promised to reshape once again the dynamics of the Eurasian gas industry.

The only certainty in the short and medium term was that Europe and Russia would remain bound together by steel pipes and intimate contractual relationships. The contractual arrangements are never definitively settled. As one European energy executive observed: "A long-term

[24] Abdelal, Çekin, and Çelik 2015. The downing of a Russian jet by the Turkish military in November 2015 delayed the project, although by 2017 it seemed to be back on track.

contract is a good handshake: we work together for fifty years; we meet from time to time to sort out the price."[25] Each agent is thus creatively, dialogically working through the challenges while embedded in a context of mutual intelligibility but systemic uncertainty. For now, European firms have achieved the contract structures that enhance their viability, while Gazprom began to search for a creative solution to the unpleasant problem of its income statement. Gazprom lamented the demise of its once highly profitable Western market.

A Sino-Russian Rapprochement

At this point Gazprom turned wishfully toward the East. In May 2014, after more than a decade of on-again-off-again negotiations, Gazprom and the Chinese National Petroleum Company (CNPC) finally reached an agreement for gas-rich Russia to supply gas-poor China.[26] The details of the deal are not public, and speculation about the realized price of the gas is rampant. After the uncertainty over the possibility of any deal between the two companies, a wholly surprising chain of events made the improbable finally conceivable. The road to the deal had followed a circuitous path from the supply-and-demand shocks of the 2000s.

The most plausible interpretation of the deal is that Gazprom's desperation in the wake of a European market that had deteriorated for an uncertain, if not indefinite, period of time, pushed the Russians toward accepting a deal. Most likely, the Chinese government had by that point also realized that the prospects of its own unconventional gas revolution were in the short term slim, though uncertainty lingered. Without the pipeline infrastructure to bring the Chinese shale gas to the population centers where it was needed, and without the water that was necessary for the hydraulic fracturing of the shale, Chinese energy firms would have to import gas until enough capital could be spent to create the network of steel or the technology evolved to become less water-intensive.

The Russian government portrayed this deal as part of a broader pivot away from Europe and the West toward Asia. The Russians narrated the adventure as a new era in Russian–Chinese relations and perhaps even a new strategic partnership. This coincided with a variety of Eurasianisms in Russian political thought that lent ideological legitimacy to a Russia that was as much a part of dynamic Asia as it was a part of the lovely

[25] Author's interview with Bruno Lescoeur, CEO, Edison, Paris, June 12, 2013.
[26] Skalamera 2014. Also see Abdelal and Tarontsi 2012; Abdelal, Skalamera, and Tarontsi 2015.

museum of Europe.[27] The Chinese, however, viewed Russia as a junior partner at best.[28]

The post-Ukrainian crisis sanctions regime may not have undermined Russia's commitment to the geopolitical organization of its near abroad, but without infusions of vital technology from the West the ability of Russian firms to honor existing contracts with China remain questionable. Given this uncertainty, Moscow was forced to invent another creative solution to disguise the increasing asymmetry of the Sino-Russian relationship as a form of resistance to an increasingly clear fate.

Thus, Russia's desperation as oil and gas prices plummeted led to an invitation that China take up the slack in investment. Equity was the cost. In exchange for Chinese investment in the fields that would provide gas for the eventual pipeline, CNPC, as one example, was able to acquire a 10 percent stake in Vancorneft, a subsidiary of Rosneft. Chinese firms, as well as the government itself, have committed the financial liquidity that Russian companies need desperately in light of collapsing investment and a severe recession.

The realities of Russia's position vis-à-vis China reveal an unhappily creative reorganization of the relationship. The equity stakes being acquired by Chinese firms will undermine the profitability of the deal for Russian firms. Since China does not depend nearly as much as Europe on Russian gas, price guarantees and upstream equity stakes will likely become essential elements of future gas deals. So, too, will the pipeline routes take the paths preferred by Chinese firms. When, in October 2014, Gazprom announced the likely cancellation of a Vladivostok LNG project, a third gas pipeline to China – in addition to the already agreed Power of Siberia and Altai projects – emerged as its successor. Russian firms had preferred to diversify energy relationships throughout Asia, but instead they are finding themselves bound together more closely with the Chinese market.

The most likely scenario, then, is that Russia will emerge as a resource appendage to China. The partnership, which had once been seen as an alternative to decreasingly profitable Western relationships, is one on which China's seniority in the arrangement requires Russian adaptation to a less attractive, but still indispensable, Asian future. Russia's acquiescence to China's growing leverage has come to resemble resignation.

As the Chinese economic slow-down combines with almost-unbreathable air, natural gas is likely to figure prominently in the leadership's interest in burning less coal without altogether abandoning less expensive, but relatively

[27] On the variety of Eurasianisms, see Katzenstein and Weygandt 2017. Also see Laruelle 2008.
[28] Skalamera 2015.

clean fossil fuels. So Russia bet on economic dynamism in China and the Pacific; China bet that its nearby resource-rich, but otherwise rather sad, neighbor will help the nation reproduce a normal, Sino-centric world. They need each other, but the uncertainty about their fates has required extraordinary creativity and improvisation by both about how to proceed.

Eurasian Borderlands

The Ukrainian crisis was a long time in the making.[29] Contemporary Ukraine is composed of territories in the east that had been part of the tsarist empire for several centuries, as well as, at the other extreme, those in the west that had been part of Habsburg Galicia and interwar Poland. Soviet Ukraine's nationalist movement emerged in Ukrainian-speaking Galicia during the 1980s, an agitation that mystified many in the Russian-speaking east. Ukrainians agreed on one basic fact: that they were Ukrainians. But they agreed on little else: not on language, or on history, or on a common geopolitical destiny.

The Putin regime had signaled with emphasis and in vain that the West, broadly conceived, was unlikely to care as much about the geopolitical fate of Ukraine as did Russian leaders. When Vladimir Putin annexed Crimea, thus undoing Nikita Khrushchev's 1954 "gift" to the Ukrainian Soviet Socialist Republic, US and European policymakers were left with a dilemma. Although they could not reasonably hope to dissuade Putin and were unwilling to support credibly western Ukraine's Western dreams, they felt that they must at least signal their displeasure. The United States imposed sanctions on the Russian economy for this purpose, as did, less exuberantly and more expensively, the European Union.[30]

For the Russians, the sanctions were unwelcome and irritating. The sanctions also represented for the Russian leadership the single most vexing aspect of post-Cold War international relations: namely, their sense of American hypocrisy.

At around the same time, the Russian economy experienced a serious crisis, and the ruble declined precipitously – from about 35 to 70 rubles to the dollar. American policymakers were quick to claim credit for Russia's economic troubles, a putative result of the sanctions regime and their employment of control power. And while it is true that the sanctions were consequential, in fact the travails of the Russian economy resulted more from the coincident, precipitous decline in the price of oil. The fall in the

[29] Abdelal 2001; Abdelal, Di Tella, and Tarontsi 2014.
[30] On this logic of economic sanctions, see Baldwin 1985.

price of oil was largely a consequence of oversupply – pulled onto the market by capital investments made when the price of oil was high – and weakening demand, particularly in China and an increasingly self-contained US energy market.[31]

In this episode we find control power in a surface narrative: a Western effort to force Russia to withdraw its territorial claims on the Crimean peninsula and involvement in a bloody armed conflict on Ukraine's eastern border. With Russia's international relations, however, the text is almost always misleading; everything interesting is in the subtext.

Russia's interests in Ukraine have already been largely achieved, and the endgame will likely deliver some sort of federal reorganization of the Ukrainian state. With Crimea as the ninetieth Russian region, there is no longer any risk, however remote it may have been, that the naval base at Sevastopol would be situated in a NATO or NATO-aligned nation. Ukraine's unitary state meant that an eastward-leaning regime could effectively tilt the country toward Eurasia, while a westward-leaning one could turn in the direction of Europe. Given Ukraine's complex institutional and linguistic history, neither definitive resolution of Ukraine's place on the border between Europe and Eurasia would be satisfactory or politically sustainable. A federal Ukraine would be permanently unable to choose, and the non-choice leaves Ukraine not-in-Europe.

Particularly given European reluctance to enforce a comprehensive sanctions regime, the US approach was similarly revealed more by subtext. Few in Washington or Brussels, much less Berlin and Paris, could have realistically believed that sanctions would force Russia to withdraw from Crimea. Yet Western leaders were, despite their vague promises of salvation to Kiev, unwilling to risk a large confrontation with Russia over the geopolitical fate that few consider a strategic priority. Doing nothing would have displayed embarrassing weakness, so sharp words and, for the United States, reasonably costless sanctions represented a language of disapproval and resignation. The coincidence of declining oil prices – a happy one for Washington, alarming for Moscow – provides for a language of serious Western conviction that belied the innovative, subtle conversation that policymakers conducted implicitly.

Conclusions

The world's two most important hydrocarbon markets – oil and gas – are impressively dissimilar. In the first, the molecules naturally occur in a

[31] Several analysts anticipated the subsequent decline by evaluating investment patterns in oil fields over the past decade. See Maugeri 2012.

liquid state, so oil can be piped, shipped, even trucked around the world and sold to the highest bidder. In oil markets power is intrinsically entwined with price and, to a lesser extent, the freedom and safety of transit routes used by anyone who has taken temporary or permanent ownership.

The relevant molecules of the second market naturally occur in a gaseous state. Although the gas molecules may be liquefied, shipped in a manner similar to oil, and then re-gasified upon delivery, the relative expense of that process is often prohibitive. So the gas generally remains gaseous. And for gas, it is more accurate to speak of a number of gas markets, rather than a single one. For these markets, producer and consumer are – intimately, literally – bound together, since physical pipelines carry the product of one firm based in one country – and only that country – to another firm and country. In gas markets, the risk to the importing country is not simply that the price will become untenable, but that the gas might stop flowing altogether with no ready alternative suppliers or other ways of generating electricity or heat at hand. Where gas moves in pipelines, it not only crosses borders, but it almost never avoids traversing state territory. It is therefore bound up with government interests, since it is not as regularly subject to the kind of market manipulations that influence the market for oil.

One might, reasoning from first principles, expect that gas markets – in which states and firms are physically bound to one another – control power would be primary, and protean distantly secondary. Yet this intuition is precisely wrong. Rather, in precisely the markets in which one might imagine state interests to dominate and control power to obtain, protean power is far more in evidence. Protean power has organized the response to uncertainty in the form of unforeseeable technological change, unknowable geopolitical transformations, and incalculable price fluctuations.