Challenges in Global Oil Governance

Andreas Goldthau

Introduction

Oil politics is about a large variety of intertwined global policy challenges, relating to the fact that oil is a global commodity; that it is produced and traded across time and geographical space; and that actions by governments, subnational actors or transnational companies create costs or benefits for third parties. In this, oil politics is about addressing challenges arising in a highly interdependent sector and policy field, in which actions by one party inevitably have repercussions on second or third actors. These interdependencies are obvious. Domestic turmoil in, say, Nigeria, may trigger a rise in oil prices on a global level; energy choices of the Chinese government are decisive for upstream investments made by multinational drilling consortia in Central Asia; and the speculative behaviour of financial market actors may put a premium on forward prices, altering price levels independent from changes in actual supply and demand balances. As argued more extensively elsewhere, current debates on oil politics tend to fall short on properly conceptualizing this interdependence. They tend to centre on states as units of analysis, to ignore global externalities and to frame energy in terms of zero sum games rather than accounting for possible win-win situations (Smith 2010; Bahgat 2003; Barnes and Jaffe 2006; Klare 2008). Evidently, however, ‘oil politics’ is no longer, and in fact has never been, a matter of national governments or nation states alone. Rather, it is about the actions of a myriad of agents involved in financing, producing, trading or consuming oil and about the incentives and constraints they face with regards to the institutional structures they are embedded in, on a national, international or global level. Such a setting can best be grasped by a governance framework. A global governance perspective on oil stresses the importance of policy actors beyond the state, acknowledges the existence of externalities of transnational scope, and conceptualizes oil politics as subject to various levels of policy making. In light of this, the key goal of this chapter is to frame pressing issues in oil as global policy challenges, requiring policy answers in the absence of a global energy authority and rendering oil politics a global governance challenge. The main argument this chapter advances is that challenges in global oil can be dealt with through the market as a key governance mechanism in global oil, flanked by institutional arrangements accounting for shortcomings the market may exhibit in delivering security of supply or demand.

In more general terms, what does a global governance framework add to our thinking about oil politics? First, it allows accounting for involved key actors and their incentive structures
beyond the state, and hence goes beyond a reductionist security lens. Second, it enables us to think about pressing issues in global oil in terms of governance challenges necessitating public policy answers, rather than in terms of peace or war. In this sense, the notion of governance as used in this chapter is a teleological, purpose driven one. Rather than aimed at describing a certain state of affairs it is instrumental in assessing the call on re-regulating interaction between involved state and non-state actors on a given problem – supply security, investment or energy transition. Third, it allows thinking about the drivers and policy answers to oil related challenges on various levels, from nation state to transnational and global.

The remaining parts of the chapter are organized as follows. The second section sets out a governance perspective on global oil. It argues that the existing global oil system is best described as being ‘polycentric’ and that the predominant mechanism governing it is the market. The third section discusses (institutional) challenges to the global oil market arising from changes in demand and supply patterns, from changes in the global business structure and from the implications of a looming transition towards a low carbon energy future. It also discusses consequences for prices and investment in global oil. The fourth section discusses implications for global oil governance.

Global oil as a governance issue

Oil has become a global commodity. It is produced and exchanged across time and geographic space while energy actors create and are subject to interdependencies and externalities of a global scope. Oil therefore is a case in which, according to standard IR theory, scholars would expect the emergence of an international institution aimed at enhancing expectations among involved actors, enabling them to overcome adverse incentives, information asymmetries and the like (Keohane 1984; Axelrod 1984). Such an institution, however, is clearly missing in energy. Standard references to the United Nations system as a classic example of international governance through international institutions obviously miss the target, as the UN is not an organization designed to specifically address energy issues. In fact, and despite attempts to pool competences in ‘UN-Energy’, the UN has so far not reached the stage of a veritable ‘energy player’ (Karlsson-Vinkhuyzen 2010). Other international bodies such as the World Trade Organization, by contrast, created to provide for a clear regulatory framework for globally exchanged commodities, have been ill designed to comprise trade in oil. WTO rules are primarily preoccupied with granting access to markets, not with addressing export restrictions, a key problem in oil trade and investment (Desta 2003). In other words: global oil is left without a global institution governing it. This very simple but important finding constitutes the starting point to frame oil (politics) in terms of global governance.

Actors in global oil

Global governance commonly refers to the regulation of interdependent relations in the absence of an overarching political authority. In essence, this means that pressing global policy problems need to be addressed without having a proper structure in place that would provide for hard incentives or constraints for involved actors. Translated to the sphere of oil, global governance would therefore refer to systems of rules or institutions structuring the interaction of key actors in the provision or consumption of the ‘black gold’. Since there is no global energy organization able to structure this very interaction and exert power over the system’s participants, the global oil system and its actors essentially need to work without a last resort authority. Admittedly, international and state-sponsored organizations exist to govern the oil industry. Yet, rather than
governing the system as a whole, they tend to organize interests among certain segments of the oil value chain. Most importantly, these institutions comprise the Organization of Petroleum Exporting Countries (OPEC) and the International Energy Agency (IEA). OPEC, a club of oil producer countries formed in 1960, organizes the interests of nations controlling some 77% of the world’s oil reserves and currently 41% of oil production (BP 2010). OPEC’s creation was partly a response to the fact that a buyers’ cartel of international oil companies (the Seven Sisters) controlled global oil trade in the first half of the 20th century, leaving reserve holding countries with only minority shares of the accrued oil rents. Setting up a producer organization was, however, also a means to overcome the adverse incentives individual oil-rich nations faced when striking deals and negotiating with international oil companies (IOCs). In a similar vein, the International Energy Agency (IEA) was created in 1974 to pool the consumer power of then 71% of world oil demand vis-à-vis the producer cartel that first showed its teeth during the 1973 oil crisis (BP 2010). To the same extent, however, the IEA was a means to overcome collective action problems among consumer countries related to oil stocks and usage, the lynchpin of their emergency response system set up after the oil shock.

Pooling producer and consumer power, OPEC and the IEA are important elements of global oil governance. Yet, the latter goes far beyond formal multilateral institutions. Key actors in a system of global oil governance centrally also comprise non-state actors. At that point, and this is where a governance approach deviates from ‘classic’ IR/security perspectives on supply security, resource access or climate diplomacy, states no longer are the only ‘game in town’. In other words: global oil governance is not confined to inter-state relations alone. Rather, it is also traders, private investors, and not the least oil companies, state-owned or private, that drive energy agendas and create the very ‘rules of the game’ according to which energy actors play (North 1990). As a matter of fact, and while writings on oil politics have very much focused on state-to-state relations, the way oil is exchanged and traded today has been as much driven by companies as it has been by governmental policies. Following the forced break-up of vertically integrated companies in the context of key producer countries nationalizing their oil assets, for instance, businesses had to find new ways to price oil and hedge their risks. This process led to the development of spot and forward markets, key elements in the global oil system as we know it today. In a similar vein, technological progress such as the development of very large crude carriers (VLCCs) enabled companies to bring down transport costs of oil and to physically integrate formerly regional markets in Europe, the USA and elsewhere. Business and private innovation were therefore as much the drivers of making oil a global commodity as were governmental actions or their (often unintended) consequences. In fact, global energy and global oil relations, for that matter, know numerous incidents in which states are by and large on the backburner. Cases in point are the various mechanisms and instruments for mediation, dispute settlement and resolution used in the oil sector, both between private companies and between states and (foreign) corporations. Furthermore, business consortia consisting of private and state-owned companies regulate their interaction through Production Sharing Agreements (PSA) or Joint Ventures which, private in nature, stipulate procedures of co-operation, split costs and revenues, and specify liabilities. Finally, these multi-stakeholder consortia may use the financial market to hedge their risks surrounding large scale exploration and production (E & P) projects and hence collectively become subject to regulatory arrangements even outside the core energy business. In all of these incidents, states tend to play a minor role while, important as rule setters, rule enforcers, facilitators or preventers of producing and trading oil, they are complemented by companies and other non-state actors in negotiating energy contracts, in implementing upstream projects and in setting rules, at least for the scope of the energy project in question.
Market as prevalent governance mechanism in global oil

To date, and in contrast to the various stages of the oil age predating 1960, oil is global, decentralized and integrated. In fact, and without aiming at stretching this analogy too far, the global oil system is probably best described as being ‘polycentric’ (Scholte 2004). It is characterized by various ‘nodes’, which are manifold and highly diverse in nature and function. These nodes comprise clubs of states (such as OPEC, or rather its biannual meetings), influential business associations (such as the American Petroleum Institute), key physical hubs (such as Cushing, Oklahoma, the price settlement point for West Texas Intermediate) or virtual trading places such as London’s ICE or New York’s Mercantile Exchange (NYMEX). As a key feature of today’s system of global oil, and despite ever re-surfacesing talks about ‘oil weapons’ or other attempts to use crude for foreign policy purposes, none of its participants is able to ‘control’ the entire system or exert power over the entirety of its participating members. The global oil system comprises far too many agents and has come to be too deeply integrated to be utilized by one single actor or to cater to individual agendas.

So what is the mechanism that governs this ‘polycentric system’ and makes it deliver? In short, this central mechanism is: the market. To date, oil is traded and priced in a highly efficient global marketplace, characterized by a large number of buyers and sellers and by a fungible commodity that is priced on a global supply and demand balance. The market is an organizing principle that translates actors’ preferences into universal signals for other system participants (through the price), and produces strong incentives and constraints for them (by providing for alternatives regarding costs and prices) to respond to these signals. The market as a system of oil governance proves to be by-and-large effective. It delivers a high value commodity, crude oil or its products, from producers to consumers; it does so over large geographical distances and long periods of time; it makes the global balance adjust to significant changes in consumption and production, now supplying the world with some 84mbpd, up from 65mbpd just 30 years ago (IEA 2010); and, despite longstanding debates about ‘peak oil’, it still tends to add more new oil to the global reserve balance than gets consumed.

Signals provided by the ‘market governance system’ can certainly be ignored. Some participants (or members of the global oil system, for that matter) may choose to leave the system or try to at least shield themselves against the incentives and constraints the system sets. This, however, is either costly or may simply come to nothing. At least it is not very effective. Given the law of one price, consumers in Iran, for instance, are subject to the same oil price levels as are consumers in, say, Western Europe. Shielding Iranian consumers for political reasons against price increases therefore requires state subsidies, which is a reason why Tehran ends up spending some estimated US$66bn or 20% of the country’s GDP in energy subsidies to keep prices low and people happy (IEA 2010). Furthermore, given that significant refinery capacity for heavy, sulphur-rich oil sits in the USA, Venezuela is forced to export more than 60% of its crude to the very country whose regional dominance it tries to challenge politically by forming the energy club of PetroCaribe (EIA 2010). And given the globally integrated nature of the market, politically motivated suggestions to ‘drill one’s way into energy independence’, a phrase that has regained popularity during the 2008–9 presidential elections in the USA, would simply translate into improving the global oil balance, not the national one. Finally, and for quite similar reasons, ‘energy diplomacy’ pursued by oil consuming nations to secure their supplies is by and large in vain. Oil brought onstream through, for instance, much discussed bilateral deals struck by Chinese national oil companies (NOCs) in Africa or elsewhere either ends up on the global market, improving the global supply side; or it is shipped back home to China, thus taking
pressure off global demand. As further elaborated below, upstream investments in regions ‘opened up’ by diplomatic means also tend to come with an economic premium. As a consequence, aims at circumventing the market may easily translate into burning money rather than improving energy security.

Despite its strong ‘track record’ in governing investment, trade, production and consumption in global oil, the market is all but a perfect mechanism. First, while the market provides for the common grounds all players act on, the existing system of global energy governance is anything but coherent and well designed. As outlined elsewhere, it is rather fragmented, characterized by overlapping institutions and nested regimes (Goldthau and Witte 2009). More importantly, however, it can fail in governing global oil effectively. As some would argue, a wide range of market failures indeed characterize global oil. These comprise inefficiencies in pricing due to incomplete information, externalities such as Greenhouse Gas (GHG) emissions, or Cobweb cycle investment problems. Most obviously probably, the sheer existence of strategic petroleum reserves (SPRs) and the very fact that they are created by government decree not upon private initiative points to potential shortcomings that the market obviously exhibits in dealing with unexpected supply shocks. Moreover, just as the market can fail, it also is far from being the answer to everything. As the history of oil reveals, existing governance systems have changed, been abandoned or replaced by alternative ones over time. In fact, the market has come to govern global oil only since the mid-1970s. Previously, and while spot markets already existed, bilateralized energy relations prevaled, leaving oil pricing to complex formulae that did not necessarily reflect supply and demand patterns, nor (market) expectations on their future development. Price transparency was extremely poor while oil markets remained by and large regionalized. The governance mechanism underpinning interactions in that system was vertical integration. In order to hedge risks and ensure profits, companies remained in control of the entire oil value chain until the 1950s and 1960s. The global market, whose development was eventually fostered by nationalization policies in key oil producer countries, replaced bilateral arrangements and gave way to the decentralized, market-based governance system known today. The latter enabled now-disintegrated companies to interact with other actors over time and space.

Challenges to the market as the prevalent global oil governance arrangement may emerge along a number of fronts. Challenges can occur in the context of rapidly changing external conditions, notably a shift in the global structure of producers and consumers, putting in question the effectiveness of the institutional arrangements created to foster the latter’s needs or stabilize the market. Some of the institutions that have been created to shape the supply side (OPEC) or pool consumer power (IEA) in fact exhibit their own internal, complex and dynamic governance structures. As we will outline in more detail later in this chapter, both of these organizations are now facing their own challenges in a changing global energy world, which requires adjusting the way they function. Challenges can emerge from actors which have to respond to non-market based incentives, notably NOCs. Enjoying increasing prominence, those actors by no means leave the system as such; yet, the fact that they are charged with political agendas or may be able to tap on soft loans may lead to a suboptimal allocation of capital, putting in question the effectiveness of the system as a whole. Challenges can, finally also stem from spillovers from one policy area to another, notably from emerging climate regimes (or the lack thereof) to the oil market. It is particularly in the context of the looming energy transition towards low carbon that such issues may emerge and lead to uncertainty and friction among participating parties. Based on these few principal premises, the next section proceeds by exploring further the challenges that may be looming to the existing system of global oil governance.
Challenges to oil market governance

The existing governance mechanism in global oil (the market) faces severe challenges against the backdrop of major trends that currently reshape the global energy landscape. These include a fundamental shift in consumption, away from traditional OECD energy consumers towards Asia but also the Middle East, coinciding with plateauing OECD production; a change in the global business structure in oil; and a looming transition towards a low carbon energy future. As a consequence, uncertainty may rise on future prices while oil price volatility may increase, putting in question necessary investments.

Changes in global consumption and production patterns

According to all forecasts, OECD consumption in oil has peaked. Future increments in global demand will exclusively stem from non-OECD, notably Asian countries. As the IEA projects, a fall in OECD demand by some 6mbpd until 2035 will be offset by an increase in non-OECD demand more than three times that volume. China alone is expected to account for 57% of the global demand increment. Even in what the IEA calls the ‘New Policy Scenario’, which accounts for already planned but not yet implemented climate policies, China’s consumption is projected to almost double between 2009 and 2035, to more than 15mbpd. Exhibiting even higher annual growth rates, India’s oil consumption is set to more than double in the same period of time, from 3.0mbpd to 7.5mbpd (IEA 2010, 105). In addition, Middle Eastern countries enter the global energy balance as an increasingly important demand side factor, as their domestic energy consumption tends to be heavily subsidized. Coinciding with a growing domestic population and oil being used as a carrier for electricity production, oil demand is set to rise by almost a third in this region.8 In all, global oil consumption will shift eastwards, with Asia gaining significance and Europe, the USA and the remaining OECD countries losing shares.

Where do these new supplies come from? As the IEA projects, the bulk of additional supplies will originate from Saudi Arabia, Iraq, Brazil and Canada (IEA 2010, 114). Output in the OECD world, by contrast has clearly plateaued and will fall in the near future. Since most of the production increment is projected to occur in Saudi Arabia and Iraq, OPEC’s market share will rise from 41% in 2010 to 52% by 2035, pushing the cartel into the prominent position it last had in the 1970s (IEA 2010, 133). Obviously, the price is a crucial component in this scenario, as oil production in Canada and Brazil is economic at oil price levels close to those in 2010 rather than those at the end of 2008. Canadian tar sand production in fact recently fell due to oil prices scratching the $30 mark at that point in time, a price level at which tar sands are not produced at economic costs. Likewise, and despite promising signals stemming from the recent capital increase carried out by Petrobras, the Brazilian oil company, Brazilian deepwater reserves are costly and difficult to extract, requiring competitive oil price levels. National politics will play a role, too. Owing to ongoing domestic turmoil, a stalemate in federal level politics and the absence of a national hydrocarbon law, Iraq is far from coming close to its production and export potential. However, despite some uncertainty, the supply side is likely to change in reaction to both increasing non-OECD demand and plateauing OECD production.

These changes in consumption and production trigger a variety of challenges, first and foremost with regards to existing international institutions of global oil governance, notably IEA and OPEC. With regards to the IEA, the OECD’s energy watchdog, the problem obviously lies in the effectiveness of its emergency supply mechanisms. Put simply: once the share of OECD demand drops, so does the share of the market ‘covered’ and ‘hedged’ by the IEA’s strategic supply stocks. In turn, newly emerging consumers, notably China and India, are not...
organized within IEA. Hence, they are not part of the organization’s emergency response mechanisms to a price shock, or more specifically to the joint rules on the mandatory volume of Strategic Petroleum Reserves (SPR) among IEA member countries, and on the mechanism to release them. A straightforward policy answer to this governance problem would be to integrate China and India into the IEA. As participation in the IEA is linked to OECD membership, emerging consumers such as India and China are currently excluded from this system for formal reasons, as accession countries need to live up to standards the OECD regards as at the core of its existence, essentially market economic principles and democratic rule. Yet, besides these formal obstacles, there is a more pertinent and fundamental problem: none of the non-members should have any interest in joining in the first place. The reason for this lies in a fundamental free rider problem, as non-IEA members can profit from oil stocks held and paid for by OECD countries. Both China and India have recently begun building up strategic petroleum reserves. Yet, in total, Chinese crude reserves account for only some 30-days’ worth of current net imports, whereas India’s stock is equal to approximately three weeks of its current net oil imports (Colgan 2009). In that, China and India not only fall short on the IEA’s 90-day stock holding requirement; they also constitute an increasingly pressing problem to the security of all global oil consumers, as a price shock would entail severe economic implications for all import-dependent countries, particularly countries characterized by high oil intensity, that is developing nations.

OPEC, while it will grow in terms of significance on the oil market, will see challenges of a different kind, although also related to its membership structure. In the years to come, the organization will see the return of a real oil heavyweight: Iraq. As indicated above, the world’s third largest reserve holder in conventional oil reserves, is preparing its comeback on the world oil market. As a corollary, it will be back in OPEC, where the Iraqi seat has been dormant following the 1991 Gulf War. This may come with costs for OPEC’s internal coherence. OPEC members in the Middle East have traditionally been locked into a continuous battle over regional primacy (Ahrari 1986, Claes 2001). Particularly Riyadh and Baghdad have been long term contenders for regional dominance in the Middle East, a fact that has significantly impacted OPEC decision making in past decades. In fact, Saudi Arabia has been a key beneficiary of Iraq effectively leaving OPEC, acting as the unrivalled leader of the organization since then. A re-emerging Iraq will likely lead to resurfacing quarrels about quotas, prices and internal dominance, which may eventually translate into difficulty for OPEC members to find common ground. For the oil market, this is not likely to be a positive development. Besides all the criticism that has been expressed about OPEC, the organization in fact plays a crucial role in stabilizing the supply and demand balance in oil. Less coherent OPEC policies towards output price targets may leave traders, investors and consumers with increased uncertainty on developments regarding half of the global crude output.

**Changes in global business structure**

The rise of new, mostly Asian, oil consumers comes with another trend that confronts the existing oil governance structure with an equally challenging problem: the emergence of new, state-controlled business heavyweights. During the last decade or two, NOCs have become important vehicles for governments in Beijing, India and elsewhere in securing their countries’ oil supplies, in fostering domestic development agendas, and in gaining influence in the global oil business. To date, NOCs populate seven out of the first 20 places in Platts’ annual survey ‘Top 250 Global Energy Company Rankings’. Among them, PetroChina was ranked seventh, whereas India’s OVL ranked 18th in 2010. NOCs are well known players in the oil market since OPEC
members renationalized their resource assets. Yet, throughout the last 30 years, they predominantly existed in producer countries and their actions have by and large remained restricted to the development and exploitation of national reserves. NOCs of the kind of PetroChina or OVL, however, ‘go out’. Activities of Chinese companies in Africa have come to be widely perceived as a symbol of the country’s rise as an economic and political world power. Some of their actions, such as Chinese National Petroleum Corporation’s (CNPC) engagement in Pariah state Sudan, CNPC’s ignorance of environmental standards in Gabun or a general ‘non-interference attitude’ towards repressive African regimes hosting Chinese companies extracting oil have sparked international criticism. In addition, the Chinese government has been accused of giving its NOCs a competitive edge in bidding processes, flanking the latter with favourable ‘no strings attached’ loans, comprehensive aid packages including infrastructure as well as political support, notably in the UN Security Council. Activities of Indian oil companies abroad have attracted less public interest, yet they are increasing in scale. As in the Chinese case, they are flanked by the occasional economic assistance Delhi grants to governments in energy-rich countries, particularly in Africa (e.g. Sudan and Nigeria) but also Central Asia (Madan 2008). Some observers suggest that India has even engaged in military assistance to certain countries such as Myanmar in which its oil corporations hold interests and assets (Kugelman 2008, 11f).

Yet, and counter to widespread debates about whether these new corporate heavyweights ‘take over’, the main challenge for the oil market does not stem from the fact that the deals struck by Asian consumer NOCs in Africa, the ‘Stans’ or elsewhere are bilateral in nature. As pointed out earlier, the oil brought on-stream either ends up being sold on the global market, strengthening the global supply side; or it is transported back to the home market, thus taking pressure off global demand. It also does not make a difference whether crude is extracted by a state-owned or a private business, so long as it becomes part of the global supply and demand balance. The real problem in fact is a rather different one: this crude is no longer made ‘visible’. NOCs tend to be opaquely governed, they are not obliged to report on a quarterly basis, and their main stakeholders (governments) often treat activities of ‘their’ companies as subject to the national security realm. As a consequence of both, access to important information such as E & P costs, investment volumes, crude oil output or the projects’ financial fundamentals is restricted and market transparency suffers.

When opening doors for their NOCs through diplomacy, development or financial assistance, governments in addition risk blurring signals the market sends on the prospects and economic viability of upstream projects. Put differently, if projects are selected on political opportunity rather than on economic fundamentals, investment location and volume may not be ‘optimal’. As some observers note, Chinese investments in Africa tend to focus on assets of little interest to international oil companies (IOCs) due to comparatively small size and minor business prospects (Downs 2007). Generating a comparatively smaller equity oil output and yielding a comparatively smaller return on investment, these upstream investments may well end up with higher costs for the barrel produced. This, in other words, means burning money, compared to a situation in which the market would drive investment decisions and allocate capital effectively. Further, if financial state backing in its various formats is available as a default option for upstream investments, capital markets may no longer be a primary source of acquiring funds for large scale upstream projects. This, in turn, further decreases transparency regarding not only the volume of investment but also the business fundamentals of the projects.

**Energy transition and low carbon**

Finally, challenges to the market governance system may stem from spillovers from one policy area to another. In the case of oil, these spillovers may primarily come from climate change.
policies. GHG emissions undoubtedly are a key externality of burning fossil fuels, notably oil. Climate change now is widely accepted as being anthropogenic, and global warming has come to be regarded as the key challenge for mankind during this and probably the coming centuries. To date, a 450 ‘parts-per-million CO₂-equivalent’ (ppm CO₂e) scenario is the politically targeted means to curb global warming at 2 degrees Celsius and to stabilize the climate. Yet, policies addressing this market failure, aiming at internalizing these externalities into the price for oil (and other fossils), may have severe side effects if ill designed or flawed. In this case, regulatory failure may simply provide for adverse incentives for the oil market rather than solving the climate problem. Cases in point are ongoing efforts to establish carbon cap and trade (C&T) mechanisms and to put a price on carbon. Attempts in Copenhagen in 2009 to set a binding CO₂ emissions reduction target and to transit the global carbon regime into a Post-Kyoto arrangement have failed. While endorsing the 2 degree climate goal, the non-binding character of the final declaration fell short on establishing a global framework to achieve that target. The 2010 Cancun Agreement, while generally regarded as a modest step in the right direction, does not stipulate binding reduction targets on a country level, either. Regional C&T systems, by contrast, remain in their infancy. The EU’s Emissions Trading System (ETS), for instance, while widely regarded as a role model and front runner in C&T does not even cover half the EU’s CO₂ emissions. The system has also been plagued with overallocation of emission rights and a carbon market collapsing in 2006 (Ellermann 2007). In the USA, by contrast, an initiative to establish a similar system got abandoned owing to a lack of support in the Senate. In addition to that, it may prove difficult to link regional systems once established, given their politico-economic incompatibility (Witte 2007). Depending on the success of emerging regional carbon regimes and the degree to which they are effectively linked to each other, the price of carbon will vary, as will the price of oil with it. This will impact on investment needs and timelines of planned upstream projects. Yet, instead of a global level playing field on carbon pricing, regionalized patchworks are likely to prevail, which may lead to uncertainty among business on how future carbon policies will affect their costs. Since it is uncertain at what pace the necessary energy transition occurs, and to what extent climate policies affect the oil price, the oil sector will be faced with uncertainty on future price levels of their core products. This situation also implies uncertainty for low carbon energy business and the renewables industry, in term of whether their products are cost-competitive.

Consequences for price signals and investment

The trends discussed above have significant consequences for the core mechanisms the market relies on: information and the price translating them into incentive and constraint for energy actors. As discussed, the rise of new Asian energy consumers might put in question the IEA’s existing emergency supply mechanisms, decreasing the market’s belief in their effectiveness and hence leading to an overshooting price in case of supply problems. OPEC, in turn, may see internal cohesion problems due to resurging Iraqi production, challenging Saudi leadership in the organization. This may increase uncertainty about OPEC behaviour and hence the credibility its announcements enjoy on output policies, targeted price bands and production levels. Furthermore, the emergence of NOCs on the consumer side and the state backing they enjoy in upstream projects exacerbate an existing transparency problem in the global oil market. Consequently, oil price formation becomes even more determined by the educated guesses of traders who, short on real market fundamentals, may need to find the price based on assumption and secondary data. As a consequence of both, oil price volatility may increase. Oil volatility has indeed become more pronounced in the last two decades, with the most massive swings so far occurring in 2008. After reaching an all-time high of almost $150 per barrel in July 2008, prices
dipped to close to $30 by the end of the same year, and shot up again above $100 since early 2010. Since then, prices have hovered around this level. Price volatility, however, has a major drawback: it disincentivizes investment into costly upstream projects (Hunt 2004, 10). Since the oil price tells little about future price levels and hence future revenues during periods of high volatility, companies will not put billions of dollars into developing new, crucial reserves. As a consequence, and while there is widespread agreement on oil demand increasing in the future, the question hence becomes whether oil can in fact find the money.

Adding to this, patchwork-like, ill-designed or even merely pending carbon policies will lower incentives for investments in oil to be made in a timely and sufficient manner. As the IEA estimates, $8 trillion need to be spent in global oil infrastructure between 2010 and 2035, mostly in upstream, and mostly in non-OECD countries (IEA 2010, 139f). Yet, since most of the major reserve holders tend to be one-sector economies relying almost exclusively on oil revenues, and given lead times of several years, these nations might not be ready to invest the necessary sums into finding new resources if future prospects on prices, and hence demand patterns, are uncertain. In turn, for a transition towards low carbon and for the necessary technologies to be put in place, a reliable price environment for oil is essential (Blyth 2010). Uncertainty and increased volatility may harm oil supply investment to much the same extent as it puts in question a timely transition towards a low carbon economy.

**Conclusion: implications for global oil governance**

Adopting a governance perspective, this chapter has touched upon selected crucial aspects of oil politics, including security of supply, environmental and climate concerns, or regional dimensions of oil, some of which have also been dealt with separately in previous chapters of this volume. It argued that global oil is best described as a polycentric system, governed by the market. The market exerts incentives and constraints on actors, whether on state, substate or transnational level, making the system as a whole a ‘work’ and deliver crude over time and space effectively. The chapter has then focused on emerging challenges to the market governance system relating to a significant shift in global demand trends in oil away from OECD towards Asian consumers, and a coinciding plateau in OECD oil production; to the resurgence of National Oil Companies in the global market, particularly originating from Asian consumer countries; and to spillovers from climate policies to the oil market. It has been argued, finally, that the market may be challenged with regards to the degree to which it is able to efficiently and effectively translate emerging trends into price signals and steer investment decisions. Crucial issues in this regard comprise uncertainty and a lack of transparency.

What are the implications for global oil governance? The market as a governance mechanism can certainly continue to work under the changed conditions and adjust to them. New nodes will probably emerge and the system will certainly look different from the existing one. What’s for sure is that it will be more ‘Asian’. Yet, and crucial for a successful adjustment, the market needs to be able to translate the new trends into signals that all participating parties understand. In other words, the market needs to find ways to effectively ‘price in’ low carbon policies, to translate changing global consumption patterns into investment decisions and to accommodate new players, particularly consumer NOCs. For this, information is key. To be sure, the market will continue to send signals and to provide for incentives (or constraints) for companies, households, traders, investors or finance ministers, also under increasingly incomplete information. Yet, these signals will inevitably be blurred. The main and most visible instrument of the market is the price. If the price is distorted, cannot be formed effectively or reflects false assumptions, then the system as such is endangered. Adjustments will then involve abrupt
changes in price. Strengthening effective global governance in oil should therefore focus on strengthening measures that support transparent and efficient price formation. This is essential to provide for planning security for producers, investors and consumers alike to provide for effective pricing signals and to channel sufficient investment into energy supplies and services. Public policies should support this on all levels, from global to regional and national. From a governance perspective, these policies will need to be as decentralized as the system is. Yet, they need to be concerted in order to be effective.

On an international level, it is obviously key to enhance producer-consumer co-operation, particularly within the International Energy Forum (IEF). The IEF, an emerging platform for producer-consumer-business talks is an example of a platform that includes both states as key members and non-state actors such as energy companies in its IEF Business Forum. This platform is likely to help tackling problems related to a notoriously intransparent oil market. The IEF’s Joint Oil Data Initiative (JODI) promises to emerge as an important element in this regard, and in relation to the reporting problems related to NOCs as discussed earlier (Harks 2010). In more general terms, platforms such as the IEF will have a crucial role to play with regards to moderating change in global energy landscape and to managing or mitigating inevitable frictions. They will be instrumental in helping the ‘newcomers’ (consumer countries and their NOCs) to find their place in the system, that is, accommodating them in the market rather than making them circumvent it. The IEA but also OPEC will need to contribute to this important goal, too, by accommodating new consumer heavyweights and, respectively, by findings way to overcome internal quarrels.

With regards to planning security relating to carbon pricing, regional solutions will likely be most crucial. Solutions will inevitably need to be tailored to regional contexts and hence take on different forms. In light of this, it will be particularly important to find ways to align emerging regional carbon pricing regimes and make them contribute to a clearly defined global GHG emissions trajectory, as already sketched out modestly in Cancun. National level policies will be crucial to flank all of the above.

Global oil governance obviously comprises a much larger set of facets than discussed in this chapter. Some important aspects have been treated more extensively elsewhere in this volume, among them resource transparency and climate change. Successfully addressing these issues will help to enhance security of supply, calming down oil price volatility and enhancing a smooth and predictable transition towards a low carbon future. Policies addressing these issues are by definition a very political exercise and nothing that the market would achieve per se. Again, as historic evidence reveals, a different future, one without the market, is certainly possible. But since transition periods are bumpy processes creating great adjustment costs, it may be worth spending time, efort and political capital to preserve the existing one and adjust it to the new circumstances.

Notes

1 Contact: goldthaua@ceu-budapest.edu
2 The terms institution and organization are use interchangeably here.
3 In this, this chapter subscribes to the definition put forward by Rosenau (1999).
5 See Thomas Waelde’s various works on this topic, among others Waelde (2003).
6 In 1960 oil producers organized themselves within OPEC, eventually marking the end of the system of the Seven Sisters.
7 On this point see also Noel (2008).
8 See also Mitchell and Stevens (2008) for a discussion of these countries’ export capacities.
9 For a comprehensive empirical study see the Baker Institute’s 2007 report on the emerging role of NOCs on the global oil market (Baker 2007).
11 There are obvious exceptions to this rule. Norwegian Statoil, for instance, is active on a global level. It is also noteworthy that OECD countries had their own NOCs, e.g. British Petroleum, privatized in the 1980s.
13 This sections draws on Goldthau (2010).
14 This point is admittedly ironic as spillovers, i.e. externalities are usually discussed as occurring in the oil market and creating costs for third parties through Greenhouse Gas emissions and climate change.
16 See also Flachsland (2009) and Edelhofer (2009) for a comprehensive discussion.
17 OPEC members, notably Saudi Arabia, would likely be able to respond to a price shock by ramping up production in order to stabilize the market; yet, it is certainly questionable at what price levels this would occur.
18 Some observers in fact regard a lack of market fundamentals as causal for oil price volatility. See Tempest (2001).
19 For recent empirical assessments of the drivers behind the 2008 oil price hike see Kaufmann (2011) and Pirrong (2010).


Bibliography


Taylor, I. 2006. China’s Oil Diplomacy in Africa. *International Affairs* 82, no. 5.


