

Global oil supplies: The impact of resource nationalism and political instability

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Synopsis

This paper looks at resource nationalism and political instability as potential causes of disruption to global oil supplies. It points to depletion preferences and strategies as one form of resource nationalism. In most cases, resource nationalism appears to be motivated by rent maximisation. Hence, we see the adoption of more restrictive policies when prices rise. Conversely, when oil prices are low, increasing export volumes becomes more important. Restrictions on exports are common, especially for natural gas, which is sometimes reserved for national consumption. Export taxes are a tool used by some countries to extract revenue from oil producers. Domestic prices of gas and petroleum products are frequently much lower than international prices, also in some sense reducing availability for export. Political instability has a much more elusive impact on oil and gas exports, and historical experience points to contradictory potential outcomes. This paper concludes that political instability and resource nationalism are rarely associated with acute supply crises or shortfalls. Their effect is rather gradual and normally compensated by action in other parts of the system.

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Introduction

Geopolitical threats to hydrocarbon production and exports include several typologies: 'resource nationalism', i.e. the voluntary adoption of policies on the part of the government of the producing country; 'political instability'; and international or domestic conflict, including terrorism.

While the meaning of the above categories may appear evident, all categories require further definition and discussion. In real life, the exact boundaries between resource nationalism, political instability and conflict are sometimes blurred.

We shall include under **resource nationalism** all policies undertaken by the national governments of the producing country that restrict access to resources to a subset of potential players, or create separation between the domestic and international market, or directly impose quantitative limitations to production and exports. These policies may result in lower exports, either directly or indirectly.

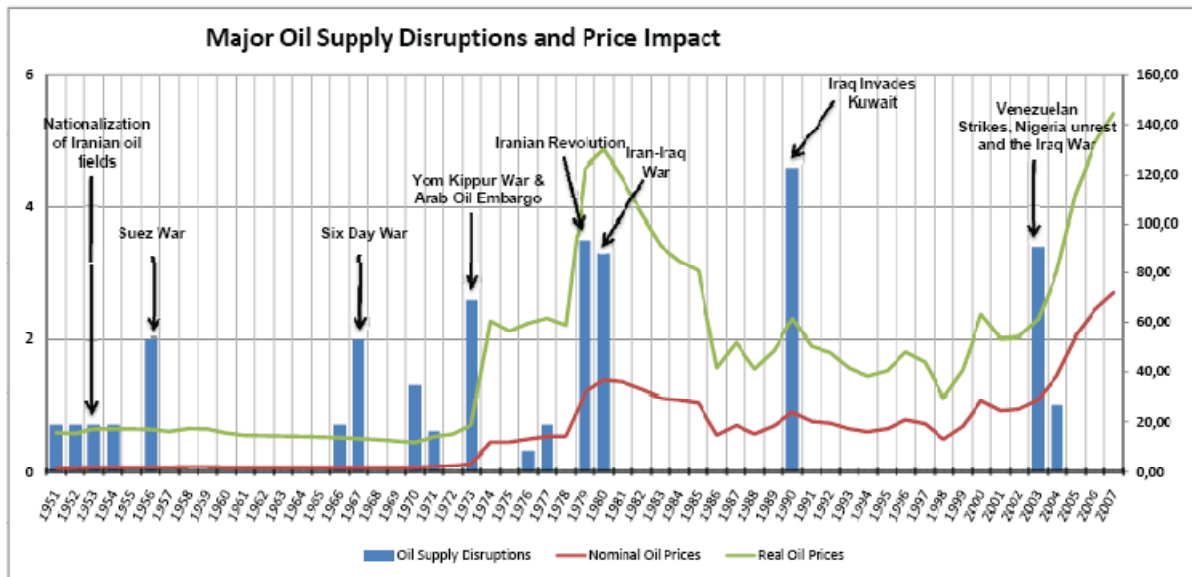
Political instability encompasses changes in policies that are the result of changes in the structure of power, i.e. in the government in place. Admittedly, once a new government is in place it should be regarded as the incumbent government, and its policies therefore would fall under the previous category of resource nationalism. However, the concept of political instability deserves separate treatment because it aims at measuring the stability of policies in the presence of changes in government. It also has an interest with respect to the possibility that endemic political instability, i.e. very frequent changes in government or the perception thereof, might create such a climate of uncertainty around oil policies that foreign actors are discouraged from considering investment.

Political instability may be the outcome of constitutional processes – as is normal in democracies – or extra-constitutional transitions, which we may group under the two main typologies of 'coup d'état' and 'revolution'. The former is typically carried out by a minority and is a component of the existing power structure; while the latter may be the outcome of a mass movement and originates from outsiders. Both cases may be more or less violent. The distinction is mainly one of duration: coups d'état and revolutions are processes that may not last for long and lead to a change in government or regime within a relatively short time. In contrast, civil wars or terrorism may be viewed as the outcome of failed or on-going revolutions that drag on in time.

The distinction might be subtle, but the rationale is clear: if only limited violence is used, material damage to infrastructure and installations, including oil installations, will not be an important concern; the change in political equilibria and priorities will be the main concern. On the other hand, when extensive or prolonged use of violence occurs, oil installations may be damaged, either deliberately or accidentally. Obviously, two different sets of issues will need to be considered in the two cases.

The literature on oil supply interruptions has developed a fairly universally accepted list of historical events that are characterised as “major disruptions”. Figure 1, below, from the Energy Information Administration of the US, illustrates these events.

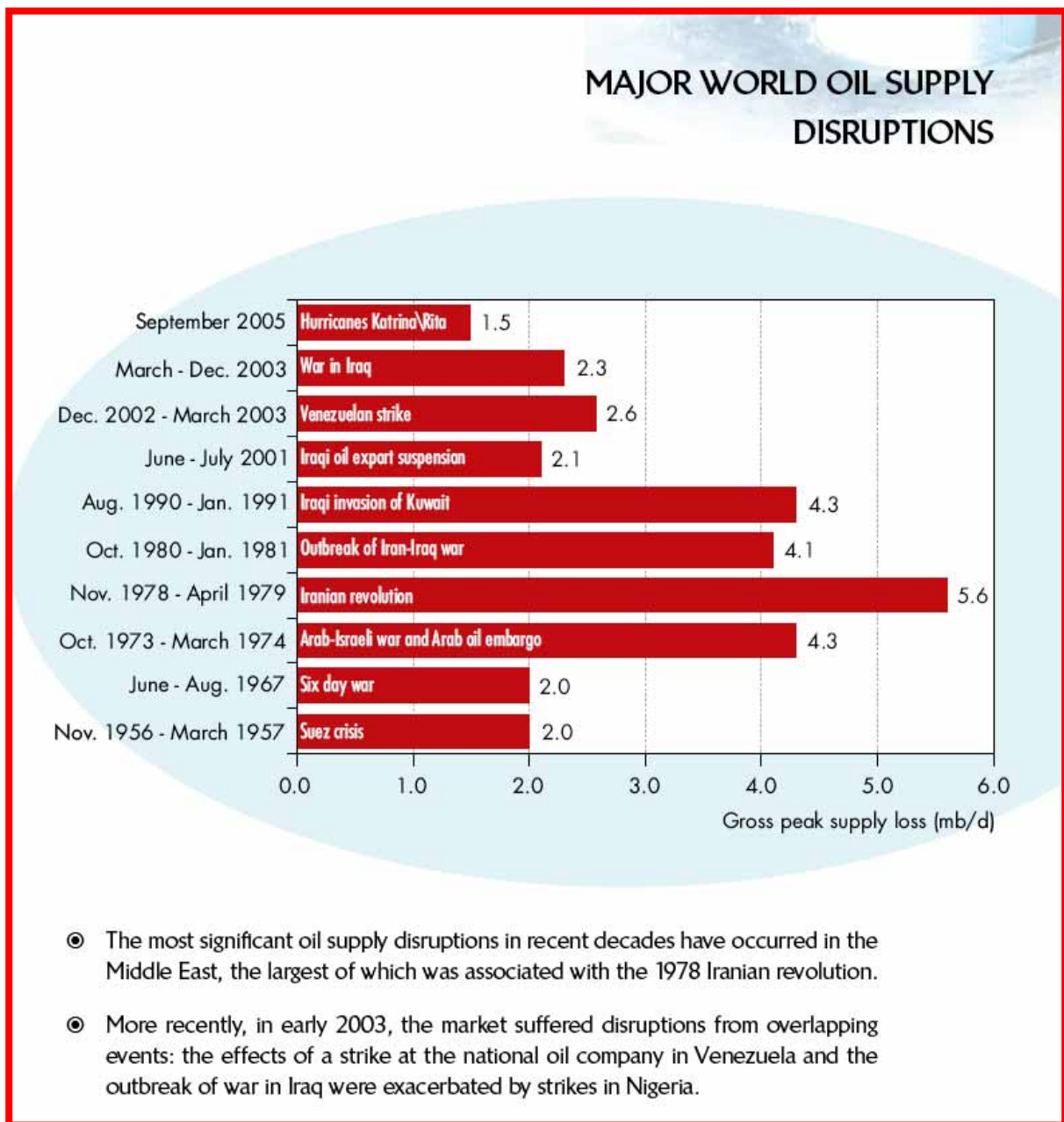
Figure 1.



There are eight events considered in this chart, of which five are international conflicts, two are domestic political events, and one is a combination of the two. A slightly different listing is proposed by the International Energy Agency (see Figure 2 below). Both charts only consider “major disruptions”. Here the question arises as to whether we should consider only cases in which an existing level of oil supply achieved before the event took place was disrupted, i.e. reduced by the event itself; or also cases in which political developments prevent the development of oil supplies that would have occurred otherwise.

Both views are problematic. If we focus on disruptions only, should we consider supply developments only in the country/region affected by the event, or at the aggregate global level? In many cases, we see that in the event of a shortfall in production in one country, production in other countries was increased to compensate, and in the end global supplies were not disrupted at all, or disrupted minimally.

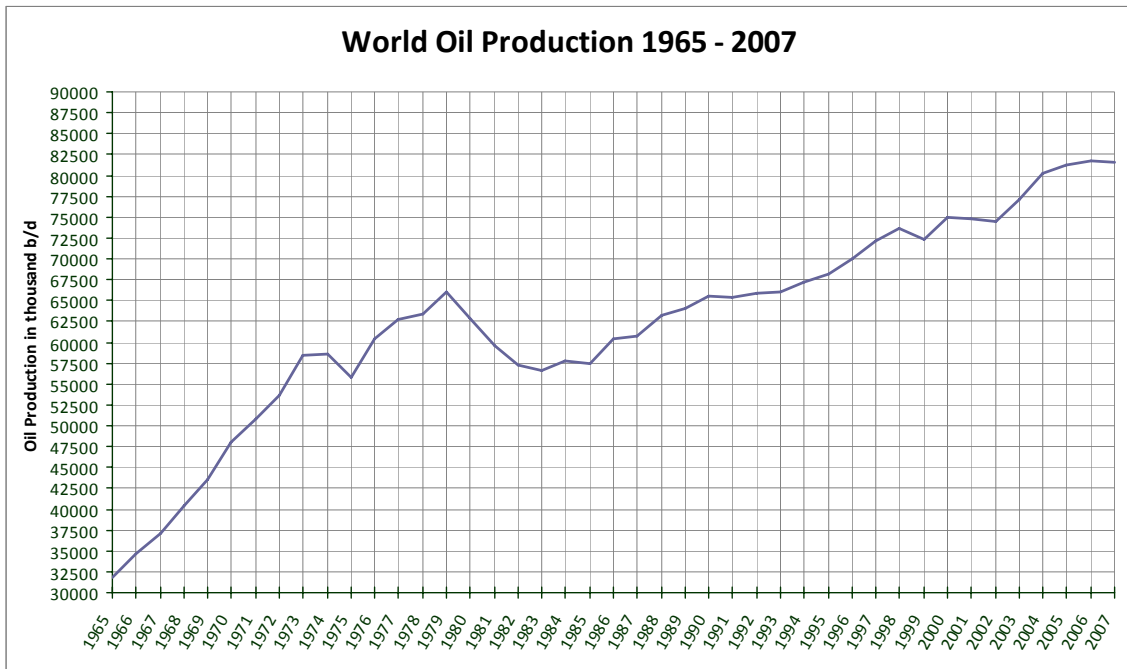
Figure 2.



Source: International Energy Agency.

Consideration of the evolution of aggregate global oil supplies shows that production remained stable between 1973 and 1974, and only declined the following year. It declined between 1979 and 1983; then again between 1998 and 1999 and between 2000 and 2003 (see Figure 3 below).

Figure 3.



Source: BP Statistical Review of World Energy

In all cases, market mechanisms, i.e. predictable demand response to higher prices, were at work, and in the case of the last two declines there is no political event at all that may be associated with the decline.

In the end, reality never conforms to the optimum, and a 'normal' level of attrition must be envisaged. Most systems normally function below capacity, but if need be they can also work above capacity – usually it is deemed that the latter is not sustainable in the long run, but what is sustainable? How long is the short run?

1. Resource nationalism

Resource nationalism comprises all policies undertaken by the national governments of the producing country that restrict access to resources to a subset of potential players, create separation between the domestic and international market, or directly impose quantitative limitations on production and exports.

This definition encompasses a wide variety of policies.

Access to resources may be forbidden absolutely, on environmental or strategic grounds (an example is US restrictions on offshore drilling, recently partially lifted by the Obama administration, then re-imposed following the Macondo well blowout); or limited, delayed or otherwise hindered by the opposition of the local population or authorities, on environmental or 'fair share' grounds (an example of both issues being the tar sands in Canada). More frequently, access is restricted to specific categories of players.

Secondly, access to resources may not be restricted to specific categories of players, but the development or pace of resource exploitation may be constrained in order to conform to OPEC quota discipline or support OPEC action to manage the market – in the case of those countries that are not members of OPEC; or in view of extending the productive life of the fields.

Thirdly, restrictions may be imposed on exports, to benefit domestic consumers and industrial users.

All the above-listed policies allow for considerable variation and flexibility in implementation. Resource nationalism is therefore a phenomenon that should be viewed as having ups and downs, and adapting to circumstances.

1.1 Restrictions to access

Restrictions on access may exist de facto or be enshrined in the law of the country. The extreme case is Mexico, where exclusion of foreign companies from upstream oil is written into the Constitution. The Constitution of the Islamic Republic of Iran does not go to the same extreme: it forbids concessions and production-sharing agreements and only allows for service contracts to be offered to foreign enterprises – a rule that the government has tried hard to work its way around, without much success.

Elsewhere, restrictions exist in practice although they may not be publicly acknowledged. Saudi Arabia is a case of de facto yet openly proclaimed restrictions, a situation which allows for exceptions and adaptations. In fact, Chevron has seen its concession in the Partitioned Neutral Zone between Kuwait and Saudi Arabia confirmed and extended; and four international consortia have been allowed to conduct exploration for gas in the Empty Quarter, with Saudi Aramco as minority partner (but they would not be entitled to any oil that they may find). The international oil companies' (IOCs') access to resources is therefore not completely excluded.

The Russian Federation may offer a case of progressive restrictions that are imposed de facto and are not presented as explicit policy: it just so happens that IOCs have progressively been squeezed out of the country on a case by case basis and to a variable extent.

In all countries, the operations of international oil companies are government regulated and subject to either a concession or a production sharing agreement or some other form of contract. In the negotiations for the conclusion of whatever legal document may be required, the government has influence on the choice of the company or composition of the consortium that will hold the contract, and can impose the desired level of national participation on a case-by-case basis.

It would be hard to find instances of countries giving no preference to national players – even Norway adopted a partially resource nationalist stance at least until the beginning of the current century and the privatisation of Statoil – i.e. at a time when Norwegian production had passed its peak.

Restrictions to access are therefore found in degrees and countries may change their position along the scale of openness/closure depending on circumstances. Some major producers never resorted to nationalisation – Abu Dhabi being the most prominent example. Others resorted to partial nationalisation – i.e. nationalisation of some, but not all companies: Libya and Nigeria are notable examples. Finally, companies that had resorted to full nationalisation later changed course and again opened to international investors: Venezuela, Algeria and Qatar are all cases in point.

Historically, access of international oil companies to resources has progressively faced more stringent restrictions. Indeed, IOCs used to enjoy predominant access and control before 1970, and lost their position in the following decade.

Changes since 1980 have not been as remarkable as in the crucially important 1970s. Soviet, then Russian reserves have declined somewhat as a share of the total, and the share of “Full

IOC access” has also declined further, but at the same time IOCs have increased the share of reserves to which they have equity access in partnership with NOCs.

In the 1990s and early 2000s, it had been predicted by some that the pendulum would swing back, and international companies would be able to acquire much more direct control over reserves. This was linked to the expectation that Russia would open up and become fully accessible, and the elimination of the Saddam regime in Iraq would be instrumental in opening the doors to that country once again. In fact, neither has happened, and if anything we have witnessed a toughening of conditions for the IOCs.

Considering that four out of five countries holding the largest reserves (Saudi Arabia, Iran, Iraq and Kuwait – roughly half of global reserves) are almost entirely off limits, major shifts in distribution will be possible only if the policy of one or more of these countries changes.

Iraq conducted two rounds of bidding in 2009, which led to the awarding of ten service contracts (that is, contracts that do not offer the IOC the possibility of booking reserves) at conditions that are judged to be extremely demanding for the companies involved. The future of these contracts is still clouded in uncertainty but one thing is clear: the IOCs will not have access to equity oil in Iraq for the foreseeable future.

The Kuwaiti government appears to have given in to opposition from the Parliament and renounced “Project Kuwait”, which it had pursued for more than 15 years; but the domestic political situation may evolve and a shift in policy may occur.

Finally, Iran has sought greater involvement of the international oil companies for years, and blames unilateral US sanctions for the difficulties it has encountered. This explanation is not entirely convincing, and certainly Iran may need to create more attractive conditions to spur serious IOC involvement, including allowing equity participation in the reserves – but this may well happen if an extended period of low oil prices prevails and the government feels the need to push production to meet its expenditure requirements.

In short, resource nationalism may be viewed as rather normal behaviour on the part of governments of oil producing countries. It may have multiple manifestations and come in degrees, rarely entirely excluding IOCs from access to resources. Much of the issue of resource nationalism is related to expectations, i.e. the extent to which IOCs judge terms that are on offer in each country as sufficiently attractive. Opinions on this differ between companies, depending on the terms available elsewhere, on alternative investment opportunities and price levels, on industry structure, on technology etc.

The point is: resource nationalism is a manifestation of the fact that each producing country wishes to maximise its share of the rent and limit the companies’ share of the same. It is a market relationship in which the strength of the bargaining position of each side shifts over time. In this sense, resource nationalism restricts oil production; but this is the outcome of producing countries protecting their interests, which is their right, obviously.

1.2 Depletion policies

In historical experience, we find instances in which governments of oil producing countries conflicted with international oil companies because they felt the latter underexploited the resources entrusted to them, as well as cases in which the opposite was true.

Iraq is a clear case of a long-lasting conflict with the international oil companies, which was due to various sources of tension, including the Iraqi government’s impression that companies were sitting on its oil resources without adequately exploiting them. In turn, companies were not willing to invest in Iraq because of enduring conflicts over tax-related issues. The Iraqi nationalisation of 1973 was motivated, among other things, by the desire to

significantly *expand* production and exports. Accordingly, following nationalisation, Iraqi oil production increased more rapidly during the rest of the decade than in previous decades, until the war with Iran broke out and production was negatively affected (Figure 1, above).

In the Soviet Union, where foreign investment was out of the question, field management practices were very much in favour of maximising short-term production, by using extensive water flooding, to the point of damaging reservoirs and possibly reducing the ultimate recovery ratio.

However, the Iraqi or Soviet cases may be viewed as exceptions. In Mexico, nationalisation finally took place in 1938, well after the fields that were known and in production at that time had peaked. It was a case of reining in the oil companies when the damage to the field had already been inflicted.

In most contemporary cases, the international oil companies wish to maximise short-term production provided that good field management practices are followed – it is the local government that in some cases prefers to slow down exploitation and keep more of the oil in the ground.

Saudi Arabia is the main case in point. The Kingdom has enunciated a strategy of not exceeding a production level which it may confidently maintain for a period of at least 50 years: no profit-maximising company would consider such an extended plateau, as the discounted value of oil to be produced 50 years from today is normally deemed very low (although in fact it very much depends on our expectation of prevailing prices at that time, about which only speculation is possible).

According to recent statements, Saudi Arabia believes that the maximum level of production defined in this way is 15 million b/d, including some use of currently non-proven reserves. New discoveries or a reassessment of known fields may alter this conclusion, and lead to a higher – or lower – ceiling. (Also note that it is not clear whether the 50 year time horizon is to be interpreted as sliding or fixed from a given, and undefined, initial date. No statement exists concerning the beginning of the ‘count down’). The adoption of this rule translates into rates of exploitation that are low by international comparison. However, no other producing country has a similarly clear-cut and explicitly enunciated drawdown strategy. Most producing countries seek to increase their production and exports, while at the same time more or less respecting OPEC quotas – but compliance with the latter is less than perfect.

Even within the Gulf Cooperation Council, Abu Dhabi has not manifested a consistent level of respect for OPEC quotas, notwithstanding the fact that it never truly faced the need to increase production in order to meet budgetary requirements. Similarly, the Kuwaiti government has long wished to increase the country’s production, and has pursued a project for the limited opening to international oil companies (Project Kuwait) since the early 1990s. In Kuwait, it is rather the Parliament that has systematically opposed Project Kuwait, and has urged the government to clarify and independently verify the status of the country’s reserves, taking into account the opinion of those experts (such as IHS Energy – Petroconsultants) who believe that figures for Kuwaiti reserves are exaggerated.

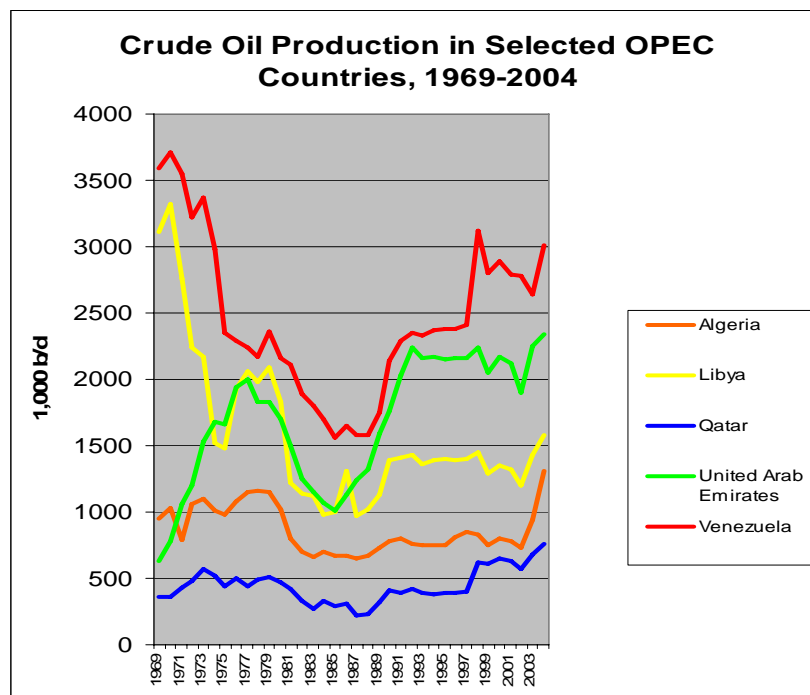
Outside the Gulf Cooperation Council, practically all producing countries are concerned with maximising their production and exports and adopt what they consider to be appropriate policies to this end. Some countries that at one stage had adopted a resource nationalist attitude later changed course and allowed international oil companies back in. Three notable cases in point are Venezuela, Algeria and Qatar. The Russian Federation may also be included in this list, if we consider the shift in policy that followed the collapse of the Soviet Union.

Of these four cases of re-opening, only one has remained unaffected by further changes in policy: that is Qatar. Algeria signalled a significant shift in the role of Sonatrach in 2000 and possibly even a privatisation of the company¹ – but later changed course and this policy now appears to be no longer on the cards.

Venezuela experienced a major shift in policy with the election of President Chavez – a case of constitutional transfer of power leading to major oil policy reorientation. The main accusation that critics addressed to the company PDVsa, and Chavez upheld, was that it undermined OPEC through non-respect of quotas, and did not pursue the maximisation of government revenue, on the contrary embarking on projects that were not revenue-maximising.²

However, since the showdown between the company and the president in the early months of 2003, and the subsequent firing of a large number of the company's managers, the government's preoccupation has been to maintain production and fill Venezuela's OPEC quotas, rather than avoid overproduction. Following the collapse of oil prices in the latter part of 2008, Chavez has signalled a desire to attract additional investment from international companies.

Figure 4.



Source: Own calculations based on data from BP (2009).

The figure above explores the relationship between resource nationalism and production levels in the case of four Arab countries and Venezuela. It is seen that all countries

¹ Ali Aissaoui, "Managing Hydrocarbon Resources in a New Era: the Call from Algeria", OIES, Oxford Energy Comment, July 2000.

² Among several critical articles, see: Bernard Mommer, "Sovereignty and Oil", *Oxford Energy Forum* No. 50, August 2002, pp. 16-17; Bernard Mommer, "Fiscal Regimes and Oil Revenues in the UK, Alaska and Venezuela", OIES, June 2001 (<http://www.oxfordenergy.org/pdfs/WPM27.pdf?PHPSESSI%20D=a5f4cd5bfe859f3d446c41b8462aae35>) and Juan Carlos Boue, "The Internationalisation Programme of PDVSA" (mimeo) (<http://www.oxfordenergy.org/pdfs/Internationalisation.pdf>).

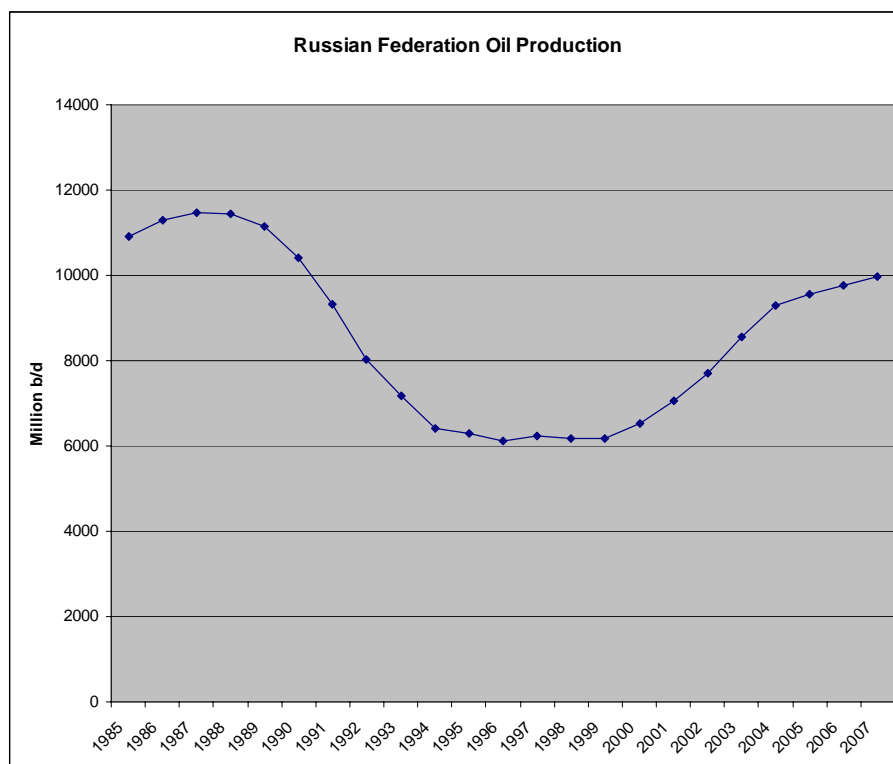
experienced a decline in production until the mid 1980s, which is when OPEC abandoned the defence of high posted prices and, after a brief interlude of netback pricing, reverted to reference pricing.

Production declined in countries that nationalised (Algeria, Qatar and Venezuela) as well as in countries that did not. Libya surely suffered from sanctions (imposed by the US and progressively tightened since 1982; UN sanctions in place 1992-2004). The UAE reduced production to abide by OPEC discipline, but promptly increased it again after 1985. Similarly, Venezuela rapidly increased its oil production between 1988 and 1998 – the “apertura petrolera”, which began around 1990 and developed progressively in the following years, contributed to it, but was not the only component. Chavez was elected president in 1998: Venezuela thus offers a rather good case of political influence on production levels.

Finally, Qatar too reversed its full nationalisation in the mid 1980s, and has since experienced a progressive increase in oil production, thanks to the involvement of international oil companies. Interpreting the Algerian record is more complicated: companies were allowed back in the late 1980s, and their contribution to Algerian production has progressively increased.

Russia experienced a period of chaotic opening during the Yeltsin presidency, during which former state-owned companies were privatised and foreign companies were allowed to invest in a not very well-defined legislative environment. The government repeatedly submitted to the Duma draft laws envisaging that production sharing agreements would be either the standard or in any case an allowed form of upstream contract, but the Duma never approved such legislation. As in Kuwait, the sentiment of the elected representatives of the people proved more nationalist than the wishes of the government.

Figure 5.



Source: Own calculations based on data from BP (2009).

The attitude of the Russian government gradually changed following the shift from the Yeltsin to the Putin administration. The latter moved to re-establish government control, first on companies formally owned by the state, but which had negotiated an extraordinary degree of autonomy for themselves (notably Gazprom); then also on some of the privatised companies, notably Yukos; and finally on some of the foreign-controlled interests, notably the Sakhalin 2³ and Kovykta⁴ projects, and TNK-BP.⁵

In the Russian case, establishing a direct relationship between resource nationalism and levels of production is tricky. Production levels were highest under the Soviet Union, peaking in 1987. Thus, the decline in production began a few years before the end of the Soviet State, and might have contributed to the crisis of the latter. After the collapse of the Soviet state in 1991, production declined rapidly until 1994, then stagnated until 1999: this just happens to be the period during which Yeltsin was president. Production again increased rapidly in the early years of the next decade and reached a new peak in 2007, slightly declining in 2008, which is when Putin left the presidency. A reading of oil production as a function of political leadership would obviously be simplistic, and in any case certainly does not corroborate linking oil sector openness with higher production and resource nationalism with the opposite.

1.3 Conclusions on resource nationalism

We shall tentatively conclude that depletion policy is a determinant of resource nationalism in some, but not all cases. The key supporting case is Saudi Arabia: this is certainly very important as the country controls close to a quarter of the world's proven conventional oil reserves. But there is plenty of evidence to the contrary.

In most cases, resource nationalism appears to be rather motivated by rent maximisation. Hence we see more restrictive policies adopted when prices are increasing, because the producing country's government will conclude that whatever arrangements are in place do not allow the country to obtain a 'fair share'; and at the same time the government and/or the national oil company will enjoy larger financial resources and will feel that they can undertake whatever investment is needed on their own, without recourse to IOCs. Conversely, when oil prices are low, increasing export volumes will be more important and financial resources for investment will be scarcer: the contribution of IOCs is more important.

The spectrum of attitudes depends primarily on structural factors rather than political or ideological inclinations. Some countries – primarily those endowed with larger reserves –

³ This is one of two PSA agreements signed under Yeltsin and 'godfathered' notwithstanding the failure to approve a proper law on PSAs. Both are based on the distant and difficult island of Sakhalin. The main partner of Sakhalin was Shell, until end 2006, when Gazprom acquired a 50% stake in the project. "Gazprom, Shell, Mitsui, Mitsubishi sign Sakhalin II protocol" official Shell website (http://www.shell.com/home/content/media/news_and_library/press_releases/2006/sakhalin_protocol_21122006.html), accessed on May 13, 2010.

⁴ Kovykta is a large condensate and gas field in Siberia which BP was forced to sell to Gazprom in 2007. See "Kovykta Project" official BP website (<http://www.tnk-bp.com/operations/exploration-production/projects/kovykta/>), accessed on May 13, 2010.

⁵ BP's appointed CEO of TNK, Robert Dudley, was forced to resign in 2008. He was substituted by Milhail Fridman of the Alfa-Access Renova Group, signalling loss of control on the part of BP, which however maintained 50% ownership. A new CEO, Maxim Barsky, was appointed to take over at the beginning of 2011. See FT January 24, 2010 (<http://www.ft.com/cms/s/0/ae2a3c34-090e-11df-ba88-00144feabdc0.html>).

find nationalist attitudes more attractive than others, and a large number of countries – notably those endowed with relatively smaller reserves – never seriously considered excluding IOCs. It may appear that some countries are beset by ideological limitations that they would like to shrug off, but cannot (Mexico? Kuwait? Iran?). But then one should not underestimate the nationalist sentiment in domestic public opinion (Russia, Venezuela, Iraq, Kuwait again...).

Looking towards the future, no fundamental shift is to be expected in the current pattern. Rather, there will be oscillations, with some countries opening up at times and closing off at others, depending on circumstances such as price levels, availability of resources, the need for expensive Enhanced Oil Recovery (EOR) technology and the like. At the same time, some countries will surely remain almost entirely closed and others will continue to rely on IOCs, as they have done up to now.

In the light of recent developments in Iraq, it is likely that this crucially important country will open its doors only to a marginal degree. IOCs will be allowed to operate on the basis of production-sharing agreements in the Kurdish region of Northern Iraq (assuming that Iraq is not partitioned), but elsewhere in the country they will be confined to service contracts.

2. Restrictions on exports

Resource nationalism restricts access to resources to national players; restrictions to exports are policies through which exports of oil and gas are limited even if access to resources is not limited and IOCs are allowed to invest and operate. Generally speaking, the existence of restrictions on exports will discourage IOCs from investing in the country, however this is far from being a universal or systematically applied rule, and numerous exceptions exist.

2.1 Export policies

In some cases, we see countries adopting policies that purely and simply prohibit the export of hydrocarbons. This is seen most frequently in the case of natural gas - in some cases also for specific petroleum products such as gasoline - to protect domestic supplies.

Policies banning or restricting the export of natural gas are notable and more widespread than often realised. The rationale is very simple: natural gas is a resource, which should be reserved to fuel national consumption and development. Countries producing both oil and gas frequently view oil as primarily destined for export, but gas to be reserved for domestic consumption.

This attitude has solid economic grounds, because the netback fiscal benefit of exporting gas is generally much lower than that of exporting oil. The higher incidence of transmission costs, whether by pipeline or as LNG, except for very short distances, reduces the potential rent that may be derived from gas production and export. Hence gas is sometimes (only too frequently, in fact) purely and simply considered not worth developing (massive flaring still takes place in major producing countries such as Nigeria, Angola or even Algeria) or even not worth exploration.

Among the major oil producing countries, Saudi Arabia has a policy of not exporting any natural gas, and reserving production exclusively for national users. There is, properly speaking, no ban on natural gas exports: no export project has simply ever been contemplated. For a long time, Saudi Aramco was not interested in exploring for natural gas. As domestic consumption increased and strains appeared in the availability of natural gas, this position has now changed. Nevertheless, it is not without reason that IOCs have been invited to explore for natural gas, while oil remains off limits.

Take the example of the UAE, which was the first exporter of LNG from the Gulf, and now is forced to import from its neighbour, Qatar, or from Iran (a contract to import gas from Iran into Sharjah never became operational because the Iranian side wanted to renegotiate the price it had agreed to, and the importer refused to do so). Abu Dhabi has given the go ahead to the exploitation of sour gas in the Shah field, which is expected to have a substantially higher marginal cost than gas exploited until now.⁶ Critics of Abu Dhabi's LNG export policy are bound to ask whether it was wise to export gas for a financial return that was relatively small and in any case not needed.

Even Qatar, which is now the most important global exporter, accounting for 20% of total global LNG trade in 2009, imposed a moratorium on new projects, in order to have time to assess the behaviour of its major field, the North Dome. This moratorium is expected to remain in place well into the next decade, and in fact it is not clear that it will ever be lifted. Qatar may opt for a slow depletion policy, similar to that pursued for oil by Saudi Arabia; and/or it may give preference to adding value to the gas through industrial transformation at home – again, similar to what Saudi Arabia has done. Much will depend not only on the behaviour of the field, but also on the evolution of demand and prices.

Gas exports from Iran remain controversial and a strong current exists in the Iranian Majlis (Parliament) that favours gas being used for domestic consumption exclusively. While the government authorities officially favour export projects and seemingly promote them, in fact the only operational export project is the pipeline to Turkey, which has witnessed throughput shortfalls in winter, when gas is in high demand in the domestic Iranian market.

Other countries in which gas exports have been highly controversial are Bangladesh and Bolivia. The case of Bangladesh is quite typical, with industry and government in favour of an export pipeline to India, but unable to overcome nationalist sentiment in public opinion. In the case of Bolivia, controversy over gas exports was instrumental in determining the collapse of the Carlos Mesa administration and the election of Evo Morales. The new president nationalised gas production and scrapped a project to export gas to Peru for liquefaction and further export to the US; however, pipeline gas exports to Brazil continued.

Exports of LNG from Venezuela have been on the drawing table for two decades at least, but little progress has been made. Besides tabling phantasmagorical ideas of pipelines across the Amazon to serve the Brazilian market, or soliciting Iranian technical assistance in establishing an LNG plant (!), President Chavez has simply not pursued gas exports. In the case of Venezuela, we may possibly attribute the negative outcome more to the incompetence or dogmatism of the president and his administration than to the desire to conserve gas for national use, as a significant opposition to natural gas exports does not appear to exist.

What about Europe? The Netherlands has exported gas for decades but refused to increase exports beyond a level that was considered appropriate in order to preserve the long-term life of its reservoirs. Norway is exceptional in that it is a major gas producer that until recently has had essentially no domestic market for gas; its power requirements being met entirely through hydro power. But elsewhere in Europe, gas has been consumed in the country where it was discovered, and export projects were not normally considered at all. The UK is a – relatively small – exception, exporting gas through the Interconnector pipeline for as long as it has had gas available for export. But even in a free market environment, gas companies prefer to serve their regular customer base rather than maximising returns

⁶ The Abu Dhabi National Oil Company ADNOC had selected ConocoPhillips as its partner in this project, but the latter suddenly withdrew from the project in May 2010; MEES, Vol. 53, No. 18, p. 20.

through gas exports, and gas has not flown from the Continent in response to higher prices in the UK whenever supplies were tight.

We shall conclude that de facto reserving gas for national consumption is very common behaviour. Only countries with very large reserves relative to domestic consumption contemplate gas exports. The refusal to export is made easier by the difficulty of establishing a gas export project, meaning that numerous obstacles have to be overcome before an export project can be successfully established, and opposition to exports has a relatively easy task. The drive to establish export projects is most frequently associated with foreign IOCs whenever they – rather than national companies – have discovered the gas, because exports promise faster and more reliable valorisation (in convertible currency, not exposed to domestic administrative interference) than domestic sales. However, the interest of the IOC does not always coincide with the interest of the country, and gas export projects are frequently very controversial.

2.2 Taxation policies

Export taxes are a tool not only to extract at least part of the rent generated by oil and gas production, but also to favour domestic consumers by creating a differential between domestic and international prices. The rationale for imposing an export tax, rather than resorting to other forms of taxation such as income taxes or royalties, is that an export tax is easy to collect while other forms of taxation may be much more difficult to assess. This rationale holds little water in the case of crude oil, whose production is relatively easy to monitor and is normally carried out by few large-scale companies. When it comes to oil, an export tax is a very rudimentary form of taxation, and is thus rarely used.

The most important and widely debated case of export taxes on crude oil exports is that of the Russia Federation. Export taxes on crude oil also exist in Argentina and Vietnam. China has an export tax on oil produced by foreign joint venture partners offshore since 2006. Kazakhstan imposed an export tax on crude oil in 2003, but abolished it as of January 2009.

The Russian export duty has been identified as a disincentive to expand production. Oil companies lack stimulus to increase production because of the high tax burden. The Russian petroleum fiscal system is quite sensitive to world oil prices, but absolutely insensitive to the costs of oil production. In 2009, the Energy Ministry indicated that under the current tax regime, only 64% of brownfields and just 7% of greenfields in Russia were profitable to exploit. The government is afraid that moving from calculating the tax based on revenues to accounting only the profit of the companies may lead to substantial decline in revenue. Oil export duties are still a very important source of revenue for the state treasury, providing for more than half of the oil and gas revenue of the federal budget, and, therefore, about one-fifth of all budget revenues. In the longer run, it is likely that export taxes and duties on crude oil will be substituted for by other, more effective and less distorting forms of taxation.

2.3 Market (volume/price) policies

Exports may be restricted because the government pursues a market intervention strategy (whatever the target of the same) and modulates exported volumes in order to achieve certain price objectives. The obvious case is collective action by OPEC to impose and modulate quotas. OPEC quotas are imposed on total production, not on exports – but in fact the determination of quota levels is primarily influenced by international market conditions and accumulation of stocks, and domestic requirements are added to whatever is believed to be the optimal volumes of crude oil to be added to the market.

Non-OPEC oil exporters may also adopt restrictions to exports in cases of severe weakness in oil prices: they are then 'encouraged' to align themselves to OPEC practices, either explicitly or implicitly. The clearest case happened in 1998-99, when Saudi Arabia pressured Mexico and the Russian Federation into unilaterally reducing exports in order to prop up prices.

Some producers enforce restrictions on the resale of exported crude oil, and only sell to final customers (refiners). Most Gulf producers do not allow secondary sales (i.e. reselling) of their crude oil, this being a key reason that a market for their crude does not exist or is very opaque. Saudi Arabia even differentiates prices as a function of destination, and has different price formulas for shipments to the Far East, to Europe and to North America. The rationale for this policy is rent maximisation, while guaranteeing the competitiveness of Saudi crude oil on all major markets (notably the US market, which Saudi Arabia wants to serve for political reasons).

Destination restrictions are not quite the same as restrictions on overall exports, and do not necessarily translate into less oil being available globally. They will just translate into a distortion of flow patterns for global oil trade relative to what they would obtain in the absence of them.

The situation is rather more complicated for natural gas, where destination restrictions are common, in part imposed by the limited availability of pipeline transmission capacity, in part imposed by way of contractual agreement. Although the European Union has declared destination clauses in long-term gas supply contracts illegal and unenforceable, very little gas flows from one importing country to another.

Rent maximisation must be recognised as a legitimate interest of any exporting country, and is not likely to be abandoned.

2.4 Domestic pricing policies

It is very common for oil and gas producers – indeed, for a large number of developing countries – to enforce domestic prices that are lower than international prices. In most cases, this is done through the determination of administrative prices for gas and petroleum products, which the national oil companies must respect. IOCs will not easily be bound by such discipline and will tend to export to higher international prices: then either the domestic market is served exclusively by the national companies, or forms of export restrictions are imposed, openly or surreptitiously.

The rationale for offering lower than international prices to domestic final consumers is as easily understood as it is faulty. The problem might not exist if international prices were more stable and increased only gradually. But the wide swings and price explosions as experienced in the first half of 2008 are difficult to pass on to domestic consumers in countries which export the vast majority of their oil and gas. As hydrocarbons are generally sold by government-owned entities, increasing domestic prices will shift purchasing power from the population to the government at a time when the latter is likely to be already flush with cash.

That oil and gas importing developing countries should also maintain domestic prices artificially low, sometimes at substantial cost to the Treasury, is less easy to understand, but the practice is so widespread that we can have little doubt about its traction.

Obviously, artificially low domestic prices will tend to result in relatively high demand, discouraging conservation and the efficient use of energy as well as the development of alternatives. Generalising on this issue, we may say that the problem resides in the lack of consensus on the appropriate policy towards the cost of energy to the final consumer.

The use of lower domestic prices as a tool for encouraging industrialisation and economic diversification is however a separate matter and is rather more defensible than enforcing low prices to the final consumer. Of course situations must be judged on a case-by-case basis, and it is possible that feedstock and/or energy prices may be truly excessively low. However, it should be recognised that governments compete globally to attract industrial investment from global corporations that enjoy considerable discretion in deciding where to locate a new plant or expand capacity. However, once the locational decision is made, investors become captive of the host country, especially in the case of large production facilities with very high up-front investment costs, as is the case for the petrochemical, steel, aluminium and other basic industries.

In this context, investors will require assurance that their key cost elements, be they feedstock or energy supply for energy intensive industry, will be available at favourable conditions. From the point of view of the oil exporting country, it is desirable to have a large base of captive customers, as global corporate investors become once they have decided on a location for their capacity. It is therefore justified to offer such price discounts as may be necessary to attract the desired investment.

Offering low-cost inputs is therefore a valid and effective industrial and development policy, and has yielded excellent results. The impact of this policy on global energy supplies is minimal, and security concerns do not offer a valid reason for criticism. That some of the industrial countries object to these practices because they damage competitors established in the oil and gas-importing countries is understandable, but one cannot expect that the oil and gas exporting countries, which frequently have only limited sources of competitive advantage, should give up on using one of the few effective tools at their disposal.

Indeed, it may be argued that encouraging industrialisation and the local transformation of hydrocarbons into various intermediate and/or final products may in the end support global energy security, because restrictions will never apply to the export of such higher value-added products. If more of the industrial processes based on hydrocarbons were to take place in the oil and gas producing countries the demand of the importing countries would be relatively reduced, and the incentive of the exporters to maximise production and exports would be much greater.

2.5 Conclusions on restrictions to exports

Our analysis has shown that restrictions on exports are widespread and take many forms. The problem is more acute for natural gas, but domestic demand may be favoured over exports, also in the case of oil and oil products. All forms of restrictions are, in a sense, a threat to security of supply, because they result in lower production and exports *ceteris paribus*.

That said, it would not make much sense to attempt to estimate the impact of such export restrictions on global oil and gas supply, and their respective costs. In the absence of such policies, in a perfectly rational world in which all national interests are aligned, oil and gas production would be higher than it actually is. Depending on one's view of available resources and on the likelihood of supplies peaking because of the physical and technological impossibility of maintaining production, the fact that production is lower than might otherwise be the case might be thought good or bad. Some view high oil and gas prices as a positive development, because they encourage savings and alternative sources of energy.

Attitudes may also change if success in reducing the global dependence on oil and gas is such that the expectation of hydrocarbons becoming more valuable is reversed. Short of that,

we expect restrictions on export to continue, and, in the case of natural gas, possibly worsen, as older fields decline and domestic demand increases.

3. Political instability

Political instability refers to government/regime change leading to changes in policy, whether brought about by constitutional or non-constitutional means. It differs from conflict, which is discussed in a separate research paper of this project.

Government change can take place by constitutional means or may be the result of a break in constitutional continuity, i.e. a regime change. In the latter case, it can play out quickly or develop into civil war. The boundary between the discussion of political instability and that of conflict is between a quickly concluded coup and a drawn-out civil war or insurgency.

In historical experience, it is difficult to see any fundamental difference between constitutional and non-constitutional changes in government when it comes to oil and gas export policies. In the vast majority of cases, neither category leads to significant changes in oil and gas policies: the latter are most frequently motivated by structural factors that are not influenced by the political order. The examples of changes in government, which have led to *no* consequential change in oil policies, are too numerous to mention.

There are a certain number of notable exceptions to this rule, which belong to both categories of constitutional and non-constitutional changes. From this point of view, there appears to be no strong empirical basis for arguing that government changes within the constitution do not entail major shifts in oil and gas policies, while changes outside the constitution do.

We shall here review a certain number of key cases, illustrating political change accompanied by important shifts in oil and gas policies. The cases to be reviewed are:

1. the appointment of Mohamed Mossadegh as Prime Minister in Iran,
2. the coup d'état which led to the demise of the same and the restoration of the power of the Shah,
3. the collapse of the monarchy and the advent of General Qasim to power in Iraq,
4. the collapse of the monarchy and the advent of Colonel Muammar Qaddafi in Libya,
5. the Islamic Revolution in Iran,
6. the collapse of the Soviet Union followed by the coming to power of Boris Yeltsin in Russia, and other post-Soviet leaders in the key oil and gas producing former Soviet republics (Azerbaijan, Kazakhstan, Turkmenistan),
7. the election of Hugo Chavez in Venezuela,
8. the election of Vladimir Putin in Russia,
9. the election of Evo Morales in Bolivia,
10. the collapse of the Saddam Hussein regime in Iraq.

We believe that these ten events include all major cases in which power shifts have led to major changes in oil and gas policies. Minor changes – adjustments to existing policies – occur more or less continuously, and are implemented by existing as well as new governments. Of the ten cases listed above, four (cases #1, 7, 8 and 9) illustrate constitutional changes, while the rest represent breaks in constitutional continuity, i.e. regime changes.

Of the ten episodes, only two are considered major crises by the EIA, that is the Iranian nationalisation of 1951 and the Iranian Revolution of 1978; only the latter is considered a major crisis by the IEA. Other events in the list have determined shifts in oil and gas policy

but in the direction of increasing, rather than reducing, oil and gas supplies (the coup against Mossadegh, possibly the collapse of the Soviet Union).

The literature considers the PDVSA strike of 2003 as a political crisis, but strictly speaking this episode did not entail a change in government. If anything, it should be categorised as a failed coup/revolution attempt. The change in government occurred earlier, with the democratic election of Chavez to the Venezuelan presidency, and that was accompanied by a change in oil policies yet not a sudden crisis or shortfall of production and exports.

The reason that the rest of these important political changes are not considered as important oil supply crises is exactly that they were not accompanied by sudden declines in oil exports. Changes in oil policies of key exporting countries may entail significant changes in global oil supplies, but will do so over time, not suddenly. It then becomes difficult or impossible to isolate and measure the 'impact' of policy shifts, as several other influences may enter into the picture.

Considering that the main interest of this paper is about the future, not the past, it is appropriate to underline the importance of historical circumstances in which these events took place. We need to question whether such events might be replicated and lead to comparable shifts in oil and gas policy.

The nationalisation of the Anglo-Iranian oil company in 1951 was instigated by the stubborn refusal of the company and the British government to consider a more equal distribution of tax revenue between the Iranian and the British governments – at a time when Saudi Arabia had reached the so-called 50/50 agreement with Aramco and the US Treasury. Today, no comparable circumstances exist anywhere. The Shah was able to restore his power and liquidate Mossadegh with the help of the CIA, but then lost power again and neither the United States nor any other external power has been able to undermine or 'moderate' the Islamic Revolution ever since. A US-led coalition did intervene militarily in Iraq to rid the country of the regime of Saddam Hussein, but this experience has proven how difficult it is to influence domestic politics in an oil producing country: Saddam's regime survived military defeat (against Iran and then against the coalition liberating Kuwait) and stringent international sanctions, and nothing less than massive invasion of the country was required to dislodge him – all with clearly negative results from the point of view of global oil and gas availability.

Similarly, the coming to power of Qaddafi in 1969 took on an importance that went beyond the presence of international oil companies in Libya, because it showed that the weapon of boycott, which had succeeded in bringing down Mossadegh, had lost its effectiveness. This opened the door to a rapid sequence of shifts in relations between international oil companies and producing countries' governments, beginning with the Tehran-Tripoli agreements, and finally leading to nationalisation in many countries and the shifting of the power to set posted prices from the IOCs to the OPEC governments.

The loss of IOCs access to resources essentially took place in the 1970s, and has not changed much since. This shift in controlling power from the IOCs to the governments is a historical phase which has now essentially concluded, and a new Colonel Qaddafi taking power somewhere in a producing country would not have the same impact as it did back in 1969-70.

The collapse of the Soviet Union is also an event of a kind, which is unlikely to be replicated. The remaining major Communist power in the world – mainland China – is not a major oil and gas exporter, and is in fact 'capitalist' enough.

We have commented already on the consequences of the collapse of the Soviet Union on Russia's openness to international investment and on the apparent inverse relationship between the latter and levels of production and export in the transition from Yeltsin to Putin.

In the FSU republics of Kazakhstan and Turkmenistan, power has remained in the hands of Soviet incumbents Nazarbaiev and Niyazov, respectively to this date and to 2006; while in Azerbaijan a period of instability preceded the advent to power of Heydar Aliyev in 1993; the latter was succeeded by his son Ilham in 2003. In all cases, the new independent governments have invited the investment of the IOCs and are pushing to increase production and exports, with variable success, generally well below initial expectations.

In all cases, further shifts in power and consequent shifts in oil and gas policies cannot be excluded. In Russia, a swing of the pendulum back to greater involvement of the IOCs is possible, if the national companies fail to at least maintain oil and gas production levels in the face of mounting technical difficulties. A revision of policies may or may not be associated with changes in power. In the Central Asian and Caucasian republics a shift in the opposite direction is possible, because of the opaque nature of many deals and outcomes that are not beyond criticism. However, it is unlikely that any change in power may lead to dramatic changes in oil and gas policies, because the countries are objectively in a difficult position and have limited alternative options.

Patrimonial regimes continue to rule some of the key oil and gas producing countries, notably Saudi Arabia, Abu Dhabi (UAE) and Qatar; in Kuwait, a patrimonial regime is coupled with a freely elected parliament, resulting in perennial stalemate, as noted above.

The patrimonial regimes in question have weathered the challenges of recent decades and displayed singular durability. We believe that in all likelihood these regimes will remain very stable because they have very strong roots in society and control of the oil rent affords them exceptionally strong tools for dealing with society's aspirations.

In all evidence, the age of frequently repeated military coups belongs to the past, and is an increasingly distant memory. Indeed, if anything the region suffers from an excess of stability, and incumbents have succeeded in transforming originally non-patrimonial regimes into patrimonial ones, in which sons succeed fathers when they die.

All that said, the possibility of regime changes in some of the major oil and gas producers in the Gulf cannot be excluded. What might happen to oil and gas policies in this case?

As was discussed in detail in previous pages, Saudi Arabia and Kuwait remain essentially closed to IOC investment, while Abu Dhabi is open but the government controls the activities of foreign oil companies closely. Nationalisation is theoretically possible in Abu Dhabi and Qatar, not in Saudi Arabia or Kuwait as there are no foreign companies that may be nationalised. More likely, attention will focus on export levels, and a more conservationist approach may emerge. This would be in line with the experience of Iran at the time of the revolution, and with the precedents of Venezuela and Bolivia.

As argued in the previous sections of this paper, we believe that a continuation or accentuation of policies restricting production and exports of oil and gas, or reserving gas especially to domestic uses, is a distinct possibility. Political change may be instrumental in provoking shifts in that direction, unless sufficient incentives exist in the global economic environment to discourage this tendency. Policy shifts in this direction are more likely to be associated with changes in power, including by constitutional means, and are frequently associated with the electoral success of populist leaders, but may very well be associated with the passage of power from one to another member of a ruling family.

The experience of Iraq since 2003 is extremely telling of prevailing trends. Notwithstanding the collapse of the Saddam Hussein regime and the occupation of the country by foreign forces, followed by the progressive empowerment of a new constitutional order amidst multiple contradictions and uncertainties, we have not at all witnessed the unrestrained opening and rapid build up of production and exports that was touted by some on the eve of the coalition's intervention.

We may look at Iraq as a case of political instability, and argue that the reason for the IOCs' lack of investment and oil production stagnation until 2010 was the difficult security situation, the absence of an oil and gas law and continuing controversy on central vs. provincial control of oil policy. Or we may argue that all of the above have been the outcome of deep-rooted resistance to foreign presence in oil and gas, which will never be accepted as fully legitimate in a democratic Iraq. In this, the situation of the Kurdish province differs from the rest because of the profoundly different political history and the enduring experience of autonomy from Baghdad.

Indeed, with hindsight it is safe to assert that IOCs would have had a much better chance to invest in Iraq; and oil and gas production and exports from the latter would have been larger, had sanctions been lifted in the mid 90s and agreements then on offer allowed to go ahead. This is not to argue that the latter would have been a politically preferable course of action, as this is not a topic for this paper, but as further proof that in recent times authoritarian regimes have been more prone to seeking the help of international investors, while democratically elected leaders are more frequently conditioned by deeply rooted nationalist sentiment.

4. Conclusions and indications for scenario building

The discussion and analysis proposed in this paper have shown that there is no easy and immediate connection between resource nationalism or political instability and global supply of oil and gas. This is emphatically not because political developments are irrelevant when it comes to influencing oil and gas supplies, but because this influence is highly variable and unpredictable.

Political factors act as one of the elements that prevent the oil and gas upstream industry from behaving in a perfectly economic-rational way, optimizing supply at all times. Instead, we live in a suboptimal world, in which reality always falls short of what would be possible and ideal.

The gap between reality and the theoretical optimum is not constant. Political circumstances may influence the gap, and let it widen or narrow down. The existence of conditions of financial stability and growth - incentivising the transformation of a physical asset, such as oil and gas in the ground, into financial assets, or infrastructural/industrial investment - is crucially important in determining the attitude of producing countries towards the desirable level of production and exports. Financial instability, negative returns on financial assets and protectionism against the oil producing countries' industrial exports all go to support the view that it is best to keep oil and/or gas in the ground.

Similarly, expectations about the future level of oil and gas prices influence political attitudes towards oil and gas production and exports. If the market expects that supply will grow scarcer in the face of increasing demand, then the incentive to slow down production and exports is increased. The adoption of aggressive policies aimed at decarbonisation and energy efficiency may have an ambivalent effect: there may be a negative announcement effect, because producers will fear demand destruction and invest less in expanding or maintaining capacity; and a positive market effect, when demand is effectively reduced,

ceteris paribus. Hence the suggestion might be not to entertain policy objectives that cannot realistically be reached, and emphasise cooperation and pragmatism rather than confrontation and extremism.

Political instability and resource nationalism have been shown to have rarely been associated with acute supply crises or shortfalls. Their effect is rather gradual and normally compensated by action in other parts of the system. Today, the system appears quite flexible and capable of withstanding even important shocks, primarily thanks to excess capacity available in Saudi Arabia. But if Saudi Arabia itself were to get into hot water politically, problems may arise even today. For the longer term, the danger that capacity additions may fall systematically short of demand increases exists, and would entail a progressive more fragile system.

References

- Aissaoui, Ali (2000), "Managing Hydrocarbon Resources in a New Era: the Call from Algeria", OIES, Oxford Energy Comment, July.
- Aissaoui, Ali (2001), "Algeria: The Political Economy of Oil and Gas", OIES, Oxford.
- Algerian Ministry of Energy and Mines, <http://www.mem-algeria.org/francais/index.php>.
- Boué, Juan Carlos (1993), "Venezuela: The Political Economy of Oil", OIES, Oxford.
- Boué, Juan Carlos (2004), "The Internationalisation Programme of PDVSA", OIES, Oxford.
- Bower, Tom (2010), "Oil: Money, Politics, and Power in the 21st Century", Harper Press.
- BP Official Website, "Kovykta Project" (<http://www.tnk-bp.com/operations/exploration-production/projects/kovykta/>)
- BP Statistical Review of World Energy, 2009.
- Daniel Yergin (1991), "The Prize", Simon and Schuster: New York.
- Energy Information Administration Website (<http://www.eia.doe.gov/>).
- Financial Times (2010), "Russians Step Back from TNK-BP", 24 January (<http://www.ft.com/cms/s/0/ae2a3c34-090e-11df-ba88-00144feabdc0.html>).
- Hertog, Steffen (2008), "Petromin: the slow death of statist oil development in Saudi Arabia", *Business History*, Vol. 50, No. 5, autumn.
- International Energy Agency (2010), "IEA Response System for Oil Supply Emergencies".
- Middle East Economic Survey (MEES), various issues.
- Ministry of Oil, State of Kuwait (<http://www.moo.gov.kw/Default.aspx?pageId=198>).
- Mommer, Bernard (2001), "Fiscal Regimes and Oil Revenues in the UK, Alaska and Venezuela", OIES, June.
- Mommer, Bernard (2002), "Sovereignty and Oil", *Oxford Energy Forum*, No. 50, August.
- Parra, Francisco (2009), "Oil Politics: A Modern History of Petroleum", I.B. Tauris & Co. Ltd, London, New York.
- Saudi Aramco corporate website (www.saudiaramco.com).
- Shell Official Website, "Gazprom, Shell, Mitsui, Mitsubishi sign Sakhalin II protocol" (http://www.shell.com/home/content/media/news_and_library/press_releases/2006/sakhalin_protocol_21122006.html).
- Stevens, Paul (2008), "Resource Nationalism and the Role of National Oil Companies in the Middle East: History and Prospects", *Journal of World Energy Law and Business*, Vol. 1, No. 1.
- Valerie, Marcel (2006), "Oil titans", Brookings Institution Press.
- Waddams, Frank C. (1980), "The Libyan Oil Industry", Johns Hopkins, pp. 251-53.

Websites consulted:

- ICC Commercial Crime Services (http://www.icc-ccs.org/index.php?option=com_content&view=article&id=30&Itemid=12).
- The International Tanker Owners Pollution Federation Limited (<http://www.itopf.com/>).