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The obstacles in the way of stabilizing the Russian oil model

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The slowdown in the growth of Russian oil output, observed since 2005, has rekindled the debate on the medium and long-term outlook for output from what is currently the world's second largest source of oil. The geological and technico-economical characteristics of the Russian oil sector (level of resources, rate of oil field depletion, etc.) obviously place structural constraints on future production trends (Grace, 2005). However above-ground factors are perhaps more important and the source of just as much uncertainty. Such factors include the institutional and organizational framework defined by the Russian state to control the activities of oil companies (Sagers, 2006a; Dienes, 2004). This institutional framework determines the various incentives for operators affecting decisions on investment strategy and management of oil resources (North, 1990). It thus represents an essential factor in the probable profile of Russian production.

Almost 15 years after the reorganization and privatization of the Russian oil industry undertaken as part of the transition process it is clear that the industry's organizational model and institutional framework still have a long way to go before achieving stability. The reforms of the mid-1990s organized the sector around an oligopoly of vertically integrated private firms. We are now seeing an adjustment of this organizational model with two companies – Rosneft and Gazprom – in which the public sector holds a majority share, playing an increasingly important role in exploration and production operations. This trend is largely encouraged by more or less discretionary actions by the federal government. It is mainly the result of the two companies taking control of assets and/or licenses previously held by private investors. According to Aslund, the liberal model of the late 1990s is now being replaced by a state capitalist model. The aim is for the state to exercise more direct control over exploration and production activities, thanks to national companies (Aslund, 2006). In parallel with this reorganization, changes in the institutional framework regulating the activity of operators are under negotiation in Russia. Current discussions between operators and the authorities regarding possible reform of the fiscal regime reflect this shift. Discussions are also focussing on reform – often projected by the authorities but never actually implemented – of the subsoil law that governs exploration and production of natural resources in Russia (Skyner, 2005).

The aim of the present paper is to study reasons and consequences of renewed state control of Russia's oil industry, and the likelihood and manner of stabilization of the institutional framework in which operators are working. What is the rationale underpinning the current state-driven reorganization? What obstacles must the state overcome to attain its goals? What uncertainties still persist? By answering these questions we aim to outline the incentives likely to be offered to companies operating in Russia, which should also lead to certain conclusions regarding the medium and long-term prospects for production.

Studies of increasing state intervention in the oil industry offer three overlapping points of view (Milov et al., 2006; Sagers, 2006b). First, it is not possible to characterize recent actions by the state as the expression of a consistent energy policy. Growing intervention only makes sense if it is seen as being underpinned by short-term political

interests. Secondly, the trend towards greater state intervention represents a powerful constraint on the prospects for growing oil output. The liberal model that organized the Russian oil industry in the late 1990s and early 2000s made possible a substantial increase in production, whereas greater state intervention undermines the stability of the investment climate for private companies. This factor, combined with the inefficiency of state companies, leaves little scope for growing output. In this respect the fall in the growth rate since 2005 and the absolute drop in the level of production observed in January 2008 – for the first time in 10 years (*PIW*, 11/02/2008) – are mainly due to the introduction of the state-capitalism model. Lastly, in view of the dominant role played by private oil companies in economic growth since 1999, growing state intervention in the Russian oil industry is seen as a major hindrance to sustained economic growth (Ahrend, 2006).

Contrary to these views, our findings show that increased state control may be justified by its interest in the management of a non renewable resource. The basic hypothesis advanced to explain the current reorganization of the oil industry is that a change in the institutional hierarchy has been underway since the start of the 2000s. This concept follows on from the idea that there are complementary links between the various institutions responsible for coordination: an institution's effectiveness and efficiency depend on how it connects to the institutions playing a dominant role in the economy (Aoki, 2001). In this sense the institutions at the top of the hierarchy are the ones that determine both the effectiveness and feasibility of implementation of complementary coordinating institutions (Amable, 2005). In our opinion the changes in the institutional hierarchy of the oil industry are due to the now clearly stated determination of the federal government to ensure that its property rights over non renewable resources are really effective (Balzer, 2005). It should be borne in mind that during the Yeltsin era the state proved unable to secure the share of oil revenue to which it was entitled. The state also proved unable to make private operators take account of its own interests in the management of oil resources. The present article consequently places the objectives, constraints and contradictions of the state's efforts to regain control in the larger perspective of its determination to change the current state of affairs. In particular we will show that the interests of the Russian authorities cannot be fully satisfied within the institutional and organizational framework of the liberal model. The main reason is the difficulty in making the relevant coordinating institutions fully effective (by securing property rights over assets, introducing a sufficiently flexible fiscal regime, and adopting suitable policies on license allocation). In this light the decision to make public companies play a bigger part in upstream oil operations seems justified. National companies may be seen as an organizational arrangement giving the Russian model greater coherence and securing the effectiveness of coordinating institutions.

The article is divided into two parts. We start by highlighting the factors that brought about the substantial rise in Russian oil output between 1999 and 2004, in keeping with the liberal model. The increase was mainly the result of short-term strategies, necessarily difficult to sustain, deployed by the big private companies. It was on this basis that the authorities concluded that the liberal model was problematic. We then point out that these short-term strategies were the result of the ineffectiveness of private property rights over assets. The second point draws on New Institutional Economics analysis of institutional complementarity. This reveals the limited margin for manoeuvre available to the Russian authorities when attempting to change the contractual framework in order to encourage private operators to deploy more long-term strategies. We think that the characteristics of the Russian institutional framework severely restrict any improvement to the contractual framework. In particular the

institutional framework introduces excessive *ex post* costs for the state apparatus in its efforts to protect itself against opportunistic corporate practices. We consequently see state public companies as an organisational arrangement making it possible to enhance the coherence of the Russian oil model. The authorities could benefit from the reduction in the information shortfall achieved by this arrangement to modify the contractual framework appropriately.

I - Structure, dynamic and institutional impasse of the liberal model

To understand the goals set by the authorities for the current reorganization of the Russian oil industry, we must start by analysing the liberal model that took shape in the early 1990s. This model made possible a certain rationalization of oil production by private companies, securing a significant increase in output from 1999 onwards. However its dynamic poses problems for the state. It is largely based on short-term strategies deployed by the oil companies and this dynamic is consequently difficult to sustain.

1. Liberal model's organization: a private oil oligopoly

The oil model initiated by the reforms at the beginning of the 1990s sought to link up an organizational model hinging on private property rights (held by the companies), a competitive system (with the start of several oil companies), and state ownership of the subsoil. By the end of the 1990s mass privatization¹ (using the voucher system) in 1992-93 and the Loans for Shares programme of 1995 had organized the Russian oil industry around an oligopoly. It consisted mainly of industrial and financial groups in which private investors – primarily Russian banks – owned a majority share. In 2003 Lukoil, Yukos, TNK, Surgutneftegaz and Sibneft controlled almost 73% of Russian oil production and more than 60% of exports (cf. table 1)

Table 1: Main Russian oil companies in 2003

(in terms of production)

	Companies	Production Mbpd, 2003	Crude exports Mbpd, 2004
Private vertically integrated companies			
1. Owned by external banks	Yukos	1.6	0.6
	TNK-BP	1.2	0.58
	Sibneft	0.6	0.2
2. Owned by insiders	Lukoil	1.6	0.59
	Surgutneftegaz	1.1	0.41
Total		6.1	2.38

¹ Privatization followed a vast process of industrial reorganization that saw the emergence of vertically integrated holdings reaching from production to distribution through refining, in keeping with standard practice in market economies.

Companies in which the state or regions hold a majority share			
- State	Rosneft	0.4	0.1
- Regions	Bashneft	0.2	-
	Tatneft	0.5	0.23
Total	-	8.4	3.7

- *The modalities of access to hydrocarbon resources*

This organizational model is based on a system of rights of access to hydrocarbon resources (mining regulations) set forth in the Subsoil Law of 1992. As is the case in almost all countries (with the notable exception of the United States), petroleum resources are state property by virtue of the Constitution of the Russian Federation, approved on 12 December 1993. The aim of the Subsoil Law is to provide a precise definition of the conditions of access to hydrocarbon resources for the various bodies involved (national companies, international oil companies, etc.) through a system of licenses. These administrative contracts, similar in form to a concession (Smith et al., 2000), enable the state to grant oil companies the right to explore and develop hydrocarbon resources. The two-key principle (Skyner, 2005) opens the way for joint management, by federal and regional government, of hydrocarbon resources and in some cases purely and simply the transfer of subsoil ownership from the federal government and the allocation of its use to certain regions.

This system was extended in 1995 by a law on production sharing agreements². This law was supposed to provide a legal framework to secure foreign investment. By means of a contract the legal regime defines a number of obligations (in terms of investment in exploration and production, rate of production, etc.) and rights, in particular with respect to ownership of the oil once produced.

- *The competitive model*

By launching several oil companies on the basis of the former oil ministry's production organizations the reform hoped to establish a competitive market. In practice the largely regional nature of reserves, the modalities governing the integration of production, refining and distribution companies, the continuation of various administered price mechanisms, and the processes of concentration led to a situation in which the main oil companies found themselves in a position of virtual monopoly over their respective regional markets (Khartukov, 2001).

2. The liberal model and changes in oil production

The prime aim of these reforms was to provide an incentive for efficient practices, through the definition of private property rights. Such practices were supposed to

² The law was changed in 2003. Henceforth the contractual form of production sharing agreements is the exception, not the rule. Only fields that no developers are prepared to develop under the usual licensing system qualify for a production sharing agreement.

Bakoulev Pavel L. (2003), « Dramatic Changes to Production-Sharing regime », International Law Office, *Energy/Natural Resources*, 18 August 3 p.

guarantee the long-term growth of the oil industry thanks to major productivity gains (or rationalization of the use of production factors), but also through more balanced development (in particular between production and exploration) securing the renewal of reserves. This approach was intended to take the place of the widespread, short-term management of hydrocarbon resources inherited from a form of coordination and development rooted in the planned economy.

Given these objectives the results seem ambiguous, in so far as the long-term evolution of the Russian oil industry (particularly regarding growth in output) seems just as uncertain as it was at the end of the 1980s. Paradoxically (even if not for the same reasons as during the Soviet era) the short-term strategies designed to maximize production and exports still govern the behaviour of the players that free-market reform brought into existence.

The start of the 2000s saw Russia's return to the international oil arena. With production in 2007 of 9.87 million barrels per day, it became the world's second largest producer behind Saudi Arabia. However, since 2005, there has been a significant dip in the growth of output, which only increased by 2.3% in 2007, 2.1% in 2006 and 2.2% in 2005. This trend, which continues into 2008, raises the question of the medium and long-term prospects for Russian oil production.

The slowdown reflects the exhaustion of the factors that originally gave rise to the spectacular increase. Between 1999 and 2004 most of the additional output was due to two main factors: oil not extracted over the transition period during which there was a significant drop in output³, and oil left in the ground due to extraction techniques left over from the 1980s. Much of the growth was consequently due to rehabilitation of existing oil fields and the application of secondary recovery techniques⁴, in other words more effective (and more intensive) development of the oil fields of western Siberia inherited from the Soviet era. It is clearly difficult to maintain such momentum (Kryukov and Moe, 2007), rooted in short-term behaviour designed to maximize production and thus exports (or outright cash stripping).

At the same time more risky, long-term investments in exploration, enabling reserves to be renewed, were largely neglected during this period. Under the Soviet regime additions to the reserves exceeded production, but this stopped being the case in the mid-1990s. Additions to reserves once more exceeded production in 2005 and 2006, though this was mainly achieved by reassessing the potential of developed oil fields in the light of new technology (Kryukov and Moe, 2007).

At a strategic level, oil companies display a distinct aversion to risk. The increase in reserves is mainly due to merger strategies or the confirmation of existing reserves. Investment in exploration was very low throughout the 1990s. Between 1988 and 1994 the volume of investment in prospecting dropped by 60%, falling by a further 30% in 2002 and 2003. Furthermore little was spent on exploring new areas, an activity that involves higher risk investments with longer return times.

Over the medium and long term production trends will depend on the development of new oil fields capable of replacing the ones discovered during the Soviet era which have

³ In 1994 24% of Russian wells had closed.

⁴ According to the World Energy Outlook published by the IEA for 2003, more than half the increase in output was due to three companies: Yukos, Sibneft and Surgutneftegaz. The first two invested heavily in assisted recovery technology (hydro-fracture, horizontal drilling).

now reached maturity, and therefore on renewal of Russia's hydrocarbon reserves. To achieve this a different pattern of growth from the current extensive (and short-term) pattern will be required. This involves a substantial change in the behaviour of Russian oil companies regarding investment policy and consequently the definition of new economic incentives better suited to directing investment strategies toward exploration.

3. Institutional blockage: the impossibility of making private property rights effective for oil assets

It is quite clear that the short-term strategies deployed by Russian companies to manage oil resources are similar to those of market players whose property rights are not secure (Gaddy et Ickes, 2006). Securing these rights is consequently a pre-requisite to allow Russian companies to adopt a more long-term view. In our view the Russian state's present determination to secure the effectiveness of its property rights over petroleum resources represents a shift in the institutional hierarchy. This shift involves particular constraints on securing private property rights over oil assets. Property rights cannot fulfil their function, which is to reduce the uncertainty of operators with respect to state actions and encourage them to develop strategies aimed to maximize the discounted present value of oil resources (see box 1).

Box 1: Functional role of formal institutions in New Institutional Economics analysis

In an article summarizing New Institutional Economics (NIE), Williamson points out that this current of thought is based on two levels of institutional analysis: the institutional environment itself and governance structures (Williamson, 2000). Governance structures are private rules defined by individuals as a framework for their transactions (see below). As for the institutional environment, it encompasses formal institutions as North sees them, in other words formal constraints defined by humans to organize their interactions (constitution, laws, property rights) and elements enabling their application, in particular judiciary bodies and the administrative "capacity" of the state (North, 1990). According to North property rights governing assets are one of the most important coordinating institutions to be considered. The form taken by the system of property rights will determine to a large extent the degree of activities undertaken by individuals, in trade and production. He identifies two reasons for this. First, securing property rights contributes to the domestication of what North calls the uncertainty of the "human environment" (North, 2005). This uncertainty is related to the impossibility for individuals to anticipate the actions of people with whom they are interacting. It introduces an inhibiting bias that may restrict the volume of trade in an economy. From the point of view of the owner of an asset, securing property rights increases the foreseeable nature of relations with third parties on account of the legal constraints that secure property rights imposed on these parties. The second reason relates to the fact that the system of property rights is a determining factor in the incentive structure affecting individuals for the management of assets. In particular securing full property rights over assets is seen as a necessary incentive for actors to deploy productive strategies with the objective of maintaining or increasing the value of assets (Alston and Mueller, 2005).

Two main factors are at the root of the contradiction between the effectiveness of private property rights over assets and of state property rights over resources. First, companies still have doubts about the credibility of the state's contractual commitments due to the difference in legal status between the two partners, the state being at one and the same time a party to the transaction and the ultimate legitimate authority in charge of upholding rights (Noël, 2000). This contradiction can be overcome, in particular by resorting to international law or through mechanisms enabling for companies to appeal to independent judicial bodies in the relevant country. Both conditions are only partly fulfilled in Russia (Tompson, 2005; Reynolds and Kolodziej, 2007). Private property over oil assets does not allow a reduction in uncertainty. The second factor is the temporary and partial nature of the right of access to resources granted by the state to private companies. Companies access resources by purchasing licenses or signing production-sharing agreements, the validity of which is necessarily limited in time. Furthermore the legitimate determination of states to control the rate of resource depletion necessarily results in restrictions on the right to use the asset transferred to companies.

An additional factor further impedes securing property rights over oil assets in Russia. It relates to the lack of legitimacy, in the eyes of the Russian people, of the oil asset privatization programme (Stiglitz, 2007; Sapir, 2007). This process, it should be borne in mind, was part of the Loans for Shares programme, thanks to which the oligarchs gained controlling rights over assets, following a particularly opaque tendering procedure and at prices well below their true value. As Sapir points out, *"the Russian population still thinks, not without good reason, that it was the victim of massive asset-stripping. People still dispute the process and demand redress from the political and economic powers. To maintain its authority, the political power has no option but to turn against the economic power brought about by privatization"* (Sapir, 2007, p. 28-29). As a consequence, the credible commitment by the state to secure property rights over assets is fundamentally and structurally problematic. In this respect the changes in the position adopted by Vladimir Putin with respect to the oligarchs, particularly those operating in the oil business, reflect the vicious circle, and its constraints, caused by the lack of legitimacy in asset privatization. During his first term [as president] relations between the authorities and the oligarchs were based on an informal pact by which the state undertook not to call into question the outcome of privatization, providing the oligarchs made productive investments in Russia and met their fiscal obligations. The ineffectiveness of this pact as a means of changing the incentives for oligarchs reflects the insurmountable difficulties induced by privatization, and its lack of legitimacy, with regard to securing these rights through credible state commitment⁵.

II - Tighter state control: towards a more consistent “institutional arrangement”?

The ineffectiveness of property rights over oil assets is undoubtedly not an insurmountable obstacle to delegating upstream oil production activities to private companies. This feature of the institutional environment nevertheless poses specific

⁵ The fact that property rights are prevented from being effective for oil assets may seem specific to the situation in Russia, but the idea developed by J. Stiglitz deserves to be highlighted in this context. He emphasizes the fact that it is extremely difficult to privatize the oil business – by which he means delegating upstream oil activities to private companies – without a degree of collusion between state officials and companies. From this point of view any form of privatization is tainted with a high degree of illegitimacy making private property rights over oil resources ineffective. (Stiglitz, 2007, p. 35-36)

problems of coordination, to which the state-defined governance structure must find an answer. In particular it remains to be seen whether the Russian state is capable of defining contractual arrangements that will channel the incentives for private companies over a longer timeframe. In keeping with NIE thinking on the complementarity links between the various institutions, this ability must be judged in the light of the particularities of the Russian institutional framework (see box 2). In our view these particularities severely limit scope for adequate reform of the governance structure, notably the tax regime.

Box 2: Complementarity links between the institutional environment and governance structures

Transaction Cost Economics (TCE), an offshoot of NIE, studies governance structures (Williamson, 2005). Such structures are understood as referring to the explicit or implicit contractual framework within which transactions occur. These private rules are necessary to protect the parties to a transaction against the potentially opportunistic behaviour of their partners. The behavioural tendency that Williamson attributes to individuals is at the root of all the problems of coordination likely to be caused by the existence of asymmetric information. Compared to other theories of contract which concentrate on defining contractual arrangements capable of overcoming these issues, TCE posits that problems of coordination can only be partly solved by *ex ante* incentive arrangements. *Ex post* opportunism is still probable and the prime goal of governance institutions is to minimize the risks of its occurrence.

Originally TCE considered that the specific characteristics of transactions, and therefore the particular coordination problems they posed, should form the only basis for gauging the relevance of the modalities adopted by the various governance structures. It has since become necessary also to take into consideration the characteristics of the institutional environment (Saussier and Yvrande-Billon, 2007). Attention has focused on two complementarity links between the institutional environment and the choice of an appropriate governance structure. First the forms taken by the formal institutions are, much as the specific features of the transaction itself, determining factors in the problems of coordination to which governance structures must find an answer. This is due to their influence over the incentives affecting individuals and their varying ability to reduce the uncertainty facing individuals in their interactions (Williamson, 1991). Secondly the specific features of the institutional environment, primarily judicial institutions and the administrative bodies of a country, impact on the feasibility of implementing such and such a governance structure. Contractual arrangements, that have proved their worth in surmounting the specific problems of coordination induced by a given transaction, may prove ineffective in a different institutional environment (Levy et Spiller, 1996). The institutional environment therefore imposes specific constraints on the choice of the right governance structure to control a transaction: it affects both the intrinsic relative effectiveness of governance structures and the scope for their deployment.

1. Constraints on improving the institution governing the transaction

The fiscal regime is undoubtedly the pivotal element in oil contracts, providing the state with an instrument for modifying the incentives affecting companies in their strategies for managing mineral resources. In several respects the fiscal regime currently applicable to upstream oil operations in Russia is incapable of fulfilling this function. The main problem relates to the form taken by these taxes (Ahrend et Thompson, 2006). Apart from tax on profits, the reforms introduced in 2002 organize the Russian fiscal regime around two main taxes: one on the mining of mineral resources, the other on exports. The first one takes the form of a fixed-rate tax applied to the level of production from each oil field. The rate is unaffected by the level of or variations in oil field production costs. The second tax concerns the volume of exports by each company. The rate for both is adjusted periodically in line with changes in international oil prices, enabling the state to tap excess profits caused by significant price rises. The main shortcoming of these fiscal instruments is the absence of any difference in rates reflecting exploration and extraction costs on different oil fields. The effects of this inflexible system contribute to encouraging operators to deploy short-term strategies. The profitability of new oil fields is apparently far from certain, as they are technically very difficult and consequently expensive to develop (CERA, 2007). In contrast operators on the vast fields of Western Siberia corner the lion's share of profits. This is undoubtedly a further incentive for companies to extract reserves as fast as possible (Konoplianik, 2003).

The authorities are obviously aware of the side-effects of basing the fiscal regime on taxes targeting the level of production and revenue of oil companies, but any changes have so far been restricted to peripheral aspects of the system⁶. This paradox seems to be due to the difficulties the state is having controlling companies *ex post* in order to guard against tax evasion strategies once flexible taxes are introduced. The auditing costs induced by introducing flexible taxes significantly restrict their effectiveness compared to taxes on production volume. The state must be in a position to check both the sale price of crude oil and the production costs of each oil field. Otherwise there is a high risk that companies will take advantage of their informational advantage to artificially minimize their fiscal obligations. This risk certainly became very real before the reform of 2002, witness the scale of the price transfer mechanism and the artificial increase in production costs reported by companies (Kryukov et Moe, 2007)⁷. In the face of these difficulties the Russian authorities have opted to base their fiscal regime on taxes that are relatively simple to administer, but with the disadvantage of a problematic incentive system caused by such taxes (Dienes, 2004). The administrative capability of the Russian state is consequently a major obstacle to far-reaching reform of the fiscal regime, despite it being necessary to steer the behaviour of operators, in particular towards a more long-term timeframe.

Much as the fiscal regime the legal framework defined by the Russian state for opening upstream oil resources cannot improve company incentives. On the contrary the legal framework contributes to maintaining a short-term perspective (Kryukov and Moe 2007). In the first place, licences are permits allocated and controlled by administrative boards. Consequently, in Russia's corruption-prone institutional environment, the control procedure is incapable of reassuring companies regarding access to resources.

⁶ This mainly concerns tax exemptions for the extraction of natural resources that may be granted to operators exploring fields in Eastern Siberia (CERA, 2007).

⁷ Concerning the price transfer mechanism, see in particular the work of the World Bank (World Bank, 2004).

Furthermore, there is currently no guarantee that a company having prospected and discovered an oil field will be able to purchase the corresponding production rights. This makes companies all the more reluctant to invest substantial assets in the exploration of new oil fields. The uncertainty regarding a company's rights is compounded by equally serious doubts about its obligations. The contents of most licence documents is very brief regarding the mandatory work that companies must undertake or the rules with which they must comply when drawing up their development plans. The lack of a formal basis inevitably contributes to the discretionary nature of decisions by the boards in charge of supervising operations, at least from the operators' point of view⁸.

Projected reforms, designed to give companies greater stability and visibility, have not been implemented. Here again the Russian institutional environment seems to impose powerful constraints. For example the draft presented by the Ministry of Natural Resources in 2005 aims to achieve a transition from the administrative regime based on the issue of licences to a system based on the signature of contracts, governed by civil law, stipulating the judicial equality of the various parties and encouraging them to turn to the courts to settle any disputes. As W. Tompson has pointed out, the lack of independence of courts could result in only a marginal improvement to the incentives on operators (Tompson, 2005).

2. Organizational answers

The Kremlin's treatment of the oil industry makes more sense in the light of the obstacles holding up adequate reform of formal institutions. Opening upstream oil resources to private operators in an institutional environment that makes contractual arrangements inoperative may be considered institutionally inconsistent. This inconsistency has prompted a reorganization of the oil industry. Although greater state control is a key feature of this reorganization, it does not account for all the current changes.

The increase in the stake held by the state in the assets of certain oil companies is one of the main characteristics of the current reorganization. Its main consequence is to allow several forms of ownership to coexist in the oil business. Alongside private companies – notably Lukoil and Surgutneftegaz – two vertically integrated companies have appeared – Rosneft and Gazprom – in which the state has a majority holding. The sudden arrival of the gas conglomerate in the Russian oil market (particularly after the purchase of Sibneft in 2005) constitutes, *de facto*, the second restructuring force in this sector. The state now controls slightly more than 30% of oil production, which in terms of property rights modifies the nature of the oil oligopoly created in the 1990s (see table 2).

Increasing state ownership of major Russian oil companies goes hand-in-hand with tougher conditions for access to hydrocarbon resources in Russia. This change affected the regions first. The various amendments to the subsoil law put an end to the principle of joint allocation, by state and region, of exploration and development licences, with the state taking full control. The regions now only play an advisory role in the process. Increased state control over the allocation of resources also penalizes foreign investors, even if approval of a new draft law on use of the subsoil, that has been in preparation for months, is still delayed. Apparently it has been decided to establish a list of

⁸ It should be borne in mind that very few licenses have so far actually been reallocated. However the authorities have often used the threat of license revocation to lever public companies into consortiums.

"strategic" oil fields to which the principle of tendering will not apply (the state reserving the right to select the companies to develop the oil fields)⁹. More, the new law on foreign investment in strategic industries stresses that when investing in a hydrocarbon firm, a private foreign investor must seek permission for more than 10%. In addition recent moves by Gazprom to join the Sakhalin II production sharing agreement or the Kovykta development project suggest that major fields will no longer be developed without the involvement of a Russian company (if possible with a majority interest). A change along these lines does not exclude foreign investors but allows limited opening, under state control, of Russian territory in line with government objectives.

Table 2: the main Russian oil companies in 2007 (by output)

	Oil companies	Output in mbd
Private companies	Lukoil	1.83
	TNK-BP	1.39
	Surgutneftegaz	1.29
	Slavneft (50 private, 50 public)	0.42
	RussNeft	0.28
	Yukos	0.18
State companies	Rosneft	2.03
	Gazprom	0.91
	<i>of which GazpromNeft</i>	<i>0.65</i>
Regional companies	Tatneft	0.52
	Bashneft	0.23
Others (including PSAs)		0.74
Total		9.82

Source: Russia's Output Surge Slows To a Crawl - *PIW*, 28 January 2007, p. 3.

This new organizational model is not yet fully defined nor stable, but Russia is nevertheless moving towards something not akin to Opec. The latter organization combines full public ownership of energy company assets, monopoly enterprise and access to natural resources restricted exclusively to the state companies, or in other words complete closure of national territory to foreign investors (Boussena and Locatelli, 2005). Several elements would tend to confirm this view. Various forms of ownership coexist in Russian companies, none of them being wholly owned by the state. Both Gazprom and Rosneft have diversified their share-ownership to include private Russian and international investors. Significantly, the increase in the state's holding in Gazprom (from 38% to 51%) coincided with liberalization of the Gazprom's

⁹ Under a new law signed by Medvedev in July 2008, access to oil and gas deposits located on Russia's continental shelf areas will be limited to energy companies that are majority-owned by the Russian state, Gazprom or Rosneft.

share market (Locatelli, 2007). In addition, Russia is a special case in that it has two state companies operating in the oil business, with a growing tendency for them to compete with one another, in particular for the allocation of licenses to explore and develop new fields. Lastly the two companies' internationalization strategies, implemented through a policy of increasingly downstream investment in European markets¹⁰ or by attempts to diversify abroad their portfolio of reserves, reflect their determination to integrate into the global economy and position themselves as competitors with the leading international oil companies.

Conclusion: the prospects for change in Russian oil output

The long-term production profile for the Russian oil industry will be determined, at least in part, by the capacity of the organizational model resulting from current changes to secure renewal of reserves. In this respect, an answer must be found to the following question: is imposing a national company on consortiums likely to induce more long-term management of oil resources by operators? Two answers, differing in their degree of optimism, may be proposed, suggesting two possible trends for oil output in the medium and long term.

The first answer is that national companies, in particular Rosneft, will also enjoy restricted property rights. In addition they will develop their own strategies for coping with the institutional framework in which they operate. Under these circumstances it is unlikely that the operators will change their management of resources (Kalyuzhnova and Nygaard, 2008; Kruykov and Moe, 2007)¹¹. In this case greater state control will not lead to a change in the governance structure. Operators will persist in their short-term strategies. Current production levels will level out or perhaps rise to some extent¹², then drop steeply. On the basis of identified Russian oil reserves of 124.4 Gb – among the most plausible estimates – stabilization of output at the present level of 10 mbd would lead to relative exhaustion of Russian reserves beyond 2020 (best-case scenario presented by Minister Yusufov, graph 1). After a decade of rapid decline Russia would be producing about 5 mbd by 2030.

But the analysis presented here of the complementarity between the coordinating institutions justifies a rather more optimistic outlook. If national companies enable the authorities to reduce their informational deficit and the cost of *ex post* monitoring of companies, it would be possible to reform contractual arrangements appropriately by introducing greater flexibility to the fiscal regime and defining licence terms giving companies greater stability. The alternative is therefore to modify the strategies of operators, either through the authorities exerting direct control over Rosneft and Gazprom, or through a change in contractual arrangements. This could result in a longer

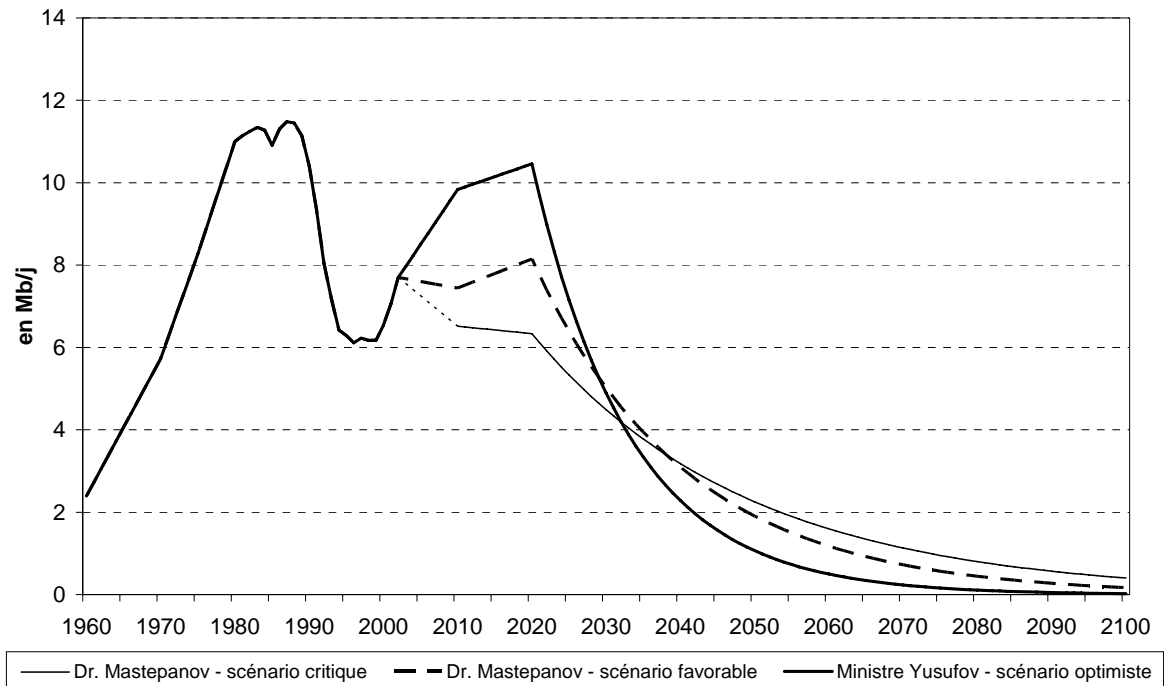
¹⁰ At present Lukoil and Gazprom have gone furthest in developing this rationale. In particular Gazprom has used downstream integration of European markets as a response to deregulation of EU gas markets (Locatelli, 2007).

¹¹ It is undoubtedly still too soon to analyse the strategies for managing oil resources adopted by national companies. Until recently the public companies behaved in the same way as their private counterparts in their efforts to explore new fields (Kryukov and Moe, 2007). Recent CERA analysis nevertheless suggests that Rosneft and Gazprom are now leading the way in exploration of Eastern Siberia (CERA, 2007).

¹² Companies such as Yukos raised the hypothesis of production reaching 12 mbd. But Lukoil now rejects this figure, stating that Russia is unlikely to exceed output of 10 mbd. "Oil production in Russia has peaked, warns Lukoil executive".- *Financial Times*, 15 April 2008.

period of steady output, followed by slower decline (see graph 1). The two scenarios presented by Mastepanov tend to show that lowering production levels to 6-7 mbd would provide for a gentler decline in output, enabling Russia to avoid becoming a net importer of oil before the second half of the 21st century.

Graph 1: potential production profiles on the basis of identified reserves



Source: S. Boussena, J-P. Pauwels, C. Locatelli and C. Swartenbroekx (2006), *Le défi pétrolier. Questions actuelles du pétrole et du gaz*, Vuibert, Paris, p. 124.

These two alternatives show that the success of the wager launched by the Russian authorities depends essentially on the relations that will be established between the federal state and national companies.

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