
Political Economy of Natural Monopolies' Reform: Evidence from Russia^{*}

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Abstract

This paper explores interactions between regulatory and political institutions during the reform process of the three major natural monopolies' sectors in Russia: electricity, natural gas and railroads. An empirical analysis of institutional and political factors that proved to determine natural monopolies' responses to the regulatory environment is provided. We find that regulatory institutions are weak that allows for multiple regulators with often confronting goals. The prevailing de jure regulatory rule is the cost-based regulation. However, current economic situation, political and institutional configurations force the government to set caps on natural monopolies' tariffs taking into account short-term inflation targets. This practice breaks the cost-based logic of utilities regulation in Russia bearing resemblance to sliding-scale regulatory scheme. What makes this scheme 'implicit' is the vagueness of power distribution between regulatory agencies and the lack of explicit profit sharing rule. That hampers the progress of reforms and favours lobbying rather than restructuring.

Key words: natural monopoly, regulatory reform, political economy, lobbying, institutions, rate of return, price cap, sliding scale, Russia.

Journal of Economic Literature Classification Numbers: D43, L51, L13

1. Introduction

After the financial crisis in August 1998 Russia has faced an unprecedented economic upheaval with the annual GDP growth averaged by 6,7%. Despite recovery being accompanied with the rise of investment and structural changes in the economy (the latter are mainly explained by import substitution effects after the sharp devaluation of the local currency), it still retains huge non-market sectors, namely *infrastructures*, that could potentially either hinder or foster the revival of economic activity in the country depending on their efficiency. The size, climate and geography of Russia make the role of infrastructure sectors very peculiar, so they constitute rather than simply serve the economy. Configuration, capacity and density parameters of these networks have been to a great extent inherited from the Soviet times where production and consumption structures were politically rather than economically determined. During all the period of transition there was no infrastructure capacity constraints faced by the economy which size was nearly halved. Yet quality of services, productivity and effectiveness of production left much to be desired. It was restructuring of infrastructure industries but not a mere redirection of the ownership rights from the public domain into the private domain as in case of privatisation that was viewed (at least in the Anglo-Saxon tradition) as a 'natural' way to eliminate such inefficiencies. In practice, however, when economic rhetoric adverts to such vertically-integrated industries as 'natural monopolies' the restructuring policy meaning disintegration of something monolithic may be perceived as 'unnatural' policy measure (see Schröder (1998) for the formal analysis of inefficient state-owned enterprises restructuring).

In this paper the term 'natural monopolies' refers to the three main infrastructure industries, i.e. electricity, natural gas and railroads, that all have natural monopoly element in the core of their businesses. It is common (though incorrect from the theoretical point of view) to adhere to this term in relation with the three major corporations dominated in these industries, namely RAO UES (Unified Energy Systems), Gazprom (natural gas monopolist) and RZD (former MPS – Russian Railway Ministry). This terminology is extensively used in Russia in economic and political debates partially because their monopolistic status get used to be perceived by the public as 'natural', partially because their demonopolisation had been considered by industries' lobbies as 'unnatural' solution for problems of this industries that had been cumulated during 90's. We exclude from the current analysis all the other infrastructure sectors (such as telecommunication, oil pipelines, postal and airport services and local utilities)

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and concentrate on natural monopolies' reforms issues that are broadly discussed at the federal level.

Formally, energy and gas sectors' reforms were announced by the government at the very early stage of transition (in mid-90s). The ideas behind these reforms were partial privatisation without restructuring, liberalisation of some prices and activities, introduction of competition and reservation a role for the state in the form of 'golden shares'. In reality the market and political power of the three (together with railways) natural monopolies had persisted. Moreover no factual separation between state and industries had occurred that helped to resist every effort to impose serious competition or increase transparency. It is the change of political configuration (after Putin being elected as a president in 2000) that made natural monopolies' reform politically feasible. Essential rotation of political elites and strengthened state decreased the political resistance to reforms. Being preconditioned by the achieved macroeconomic stability the new window of options for the market oriented reforms opened. It took another four years for the electricity and railroad reform packages to have been pushed through the parliament (in 2003) and would need extra time to start the gas sector restructuring (if any).

On the one hand it was the choice of the president to start reforms and formulate their priorities. On the other hand the design of reform packages was leased out to reformed industries. One possible theoretical rationale for such a choice made by a particular political force or group of interest is presented by Tornell (1998). He points out that reform can be used by some powerful groups as a tool to limit the power of their political opponents (let us say the former elite). Advocating the idea of endogenous institutional change he also argues that groups with common access to the economy's resources find it individually rational to over-appropriate resources. The following deterioration of the economy drives it to a crisis resulting in the reform. On the contrary Rodrick (1996) assumes that policymakers have the autonomous power to set the reform agenda. Having much in common with Rodrick's interpretation situation with natural monopolies' reform in Russia turned out to be more complicated.

Tangible signs of economic recovery revealed the main infrastructural problems: lack of investments, low quality of services and absence of internal incentives to minimise costs. To remedy the situation a 'new' reform strategy was proposed for all the three natural monopolies including deregulation and unbundling of vertically integrated services. To encourage competition where possible was the leitmotif of reforms in case of rail and electricity sectors. Major priorities, goals and set of measures appeared to be in line with international experience of natural monopolies' reforms with special attention paid to stability preservation via gradual approach (see von Hirschhausen and Waelde (2001) for the institutional interpretation of energy sector reform in Eastern Europe and the CIS). Admitting the importance of such measures one cannot but recognise as necessary establishing a new regulatory system to accompany rather than substitute this pro-competitive policy. However little concrete could be found in reform packages about the way it should be organised. Nevertheless during the initial stage of reforms, period of search for optimal reform package, natural monopolies were subject to tariff and non-tariff regulation.

The aim of this paper is to provide the conceptual framework for the study of regulatory process in Russia. We answer several questions: 1) what is the real (*de facto*) regulatory mechanism in Russia and how does it work; 2) what determines the 'weakness' of regulatory institutions in Russia and how to reform them in order to stimulate natural monopolies to restructure. It is the political economy that attempts to capture the features of such a highly politically oriented process as the reforming of natural monopolies turns out to be.

The paper proceeds as follows: section 2 describes the role of natural monopolies in Russian economy and the problems with them. Section 3 analyses the formal regulatory institutions and answers the question *who regulates what and how*. In section 4 we shed light on the political economy context of the natural monopolies' reforms. Section 5 discusses regulatory

policies and outcomes as a result of interaction of formal and informal institutions. Section 6 compares the programmes of the natural monopolies' reforms and questions the consistency of reform measures. Finally, section 7 concludes the paper.

2. 'Natural' problems with infrastructure sectors in Russia

One can hardly overestimate the role natural monopolies play in Russian economy. The total output of the three mentioned natural monopolies together with telecommunication sector exceeds 15% of GDP, their profits add up to 25%, capital investment – 20% of the whole economy. The well-being of these sectors could potentially guarantee either the basis for the long-run growth (via provision of infrastructure services) or allow the rest of the economy (through the mechanism of cross-subsidisation) to be at least in the short run relatively competitive¹. The position of Gazprom in the economy is more than crucial. About 30% of the federal budget revenues are collected from taxes levied on Gazprom and its dividends.

Table 1. Major Natural Monopolies in Russian Economy in 2002

	RAO UES	Gazprom	RZD (MPS)
Formation	15.08.92	17.02.93	18.09.03
State ownership	52.5%	38.5%	100%
Infrastructure	96,1%	100%	100%
Industry share	transmission - 100% electricity - 69,4% heat - 32,8%	transmission - 100% gas production - 88%	rail carriages - 100% freight turnover - 39% passenger turnover - 41%
Total revenue, bl. RUR	564,7	990	418,6
Pre-tax profit, bl. RUR	44,7	147,9	16,9
Profitability (pre-tax profit/total revenue)	7,9%	15%	4%
Equity capital, bl. RUR	152	1711	1535,7*
Book value of fixed assets, bl. RUR	521,8	1855	41
Liabilities, bl. RUR	12,3	388	30

Source: Goskomstat, Natural Monopolies 2002 Annual Reports

Exchange rate in 2002: \$1≈RUR30

* - 100% state-owned enterprise, 2003

The figures about profitability of natural monopolies should be judged with great care because each multiproduct natural monopoly is able to resort to cost-padding practices when manipulating with these figures. A striking example can be found in the official report of the MPS in 2002 where they shown huge 42,8 bl. RUR of net loss with the credit repayment of 23 bl. RUR. The financial position of electricity sector is fairly stable though it is not clear (even for RAO UES managers) how long will the industry exploit the capital stock built in the Soviet past without serious re-equipment. In case of Gazprom the lack of investment and huge debt may seriously undermine the new gas-field developments.

Inefficient investment policies

It is worth mentioning that during all the post-crisis period (started from 1999) natural monopolies' have been demonstrating positive profits with virtually no direct subsidies from the government (the indirect government support of these industries mainly takes the form of debt to the government). Nevertheless neither such a fairly comfortable financial position reflects the genuine profitability of the main activity not the situation with the network assets of natural monopolies. Basically speaking, the question about the real level of deterioration and obsolescence of infrastructures remains unanswered due to the lack of thorough professional expertise (owing to missing technical monitoring competency of regulatory agencies) and insufficient transparency of the monopolists. From the accounting point of view infrastructure assets have depreciated up to 55. In 1998, for example, accumulated depreciation in electricity sector was 48,3% that slightly below the economy average 50,4%

¹ This issue is currently on the agenda of WTO accession negotiations with Russian counterparts.

sector was 48,3% that slightly below the economy average 50,4% whereas in 2001 it turned out to be 3,7% higher than in the rest of the economy.

Bearing in mind the information asymmetry we notice here that these figures reveal some information on the investment policy and, to a larger extent, on the depreciation policy in the past but cannot be considered as a serious economic argument in favour of demand for new investment, converting the disputes about the need for infrastructure investments from the economic ground to the political one. Nevertheless it is commonly asserted that natural monopolies have not been serving customers as well as they could have. To fight with those problems Putin's Government initiated the natural monopolies' reform, specifically in such sectors as rail transport and electric power, so that they provide their goods and services more effectively and more according to the wishes of consumers.

Unlike RAO UES and RZD, Gazprom has additional financial resources from its export revenues to finance investment programs and to keep the domestic prices for natural gas at a low level (about \$20/1000m³ in 2002 that is 1/5 of price of sale to Western Europe). The following figures would help to get some insight about the scope of structural and price discrepancies in Russian economy: natural gas is sold to Kazakhstan at a price twice as high as domestic one, reduced fuel oil price is 3 times higher in summer and 4-5 times higher in winter, coal price is 1,5-3 times higher per equivalent unit. By no means the need to smooth such proportions will impose some extra constraints on the ways, speed, sequencing and timing of natural monopolies' reforms.

Cross-subsidies

Several types of cross-subsidies in natural monopolies' sectors take place in Russia. First one comes from the 'natural' (or economically rational) behaviour of the monopolist that discriminates between various consumers with different elasticities of demand functions charging higher prices for those with higher willingness to pay (so called *Ramsey pricing*). Good example of such a policy is the schedule of railway tariffs (Preiskurant 10-01) that distinguishes between three types of load relative to their value added. As for the gas monopolist it subsidises domestic consumers from its export revenues. In both energy sectors regulatory policy is designed in such a way that allows significant cross-subsidisation of households at the expense of industrial consumers.

Another type of cross-subsidies has much to do with politics. For instance, mass-scale granting of individual tariffs, departmental telegrams and instructions on particular tariffs of the Ministry of Railway Transport (which until September 2003 combined economic and administrative functions), and anti-competitive behaviour of railroads (delaying or even refusing the provision of access to the essential facilities) have been creating unequal conditions for independent operators, forwarding agents, proprietors of the rolling stock, and have been infringing the interests of economic entities and citizens (see Dementiev and Doronkin (2001) for the detailed analysis).

From the political economy point of view such a 'flexible' tariff policy could be viewed as an outcome of a political bargaining between regulator, natural monopoly and powerful pressure groups and could be justified as a 'rational outcome' in this sense. In addition it turned out to be 'rational' from the government's point of view because liquidation of cross-subsidies in these sectors would inevitably increase on-budget expenditures that could be undesirable for the government seeking fiscal stability (budget surplus, foreign debt repayments) and viewing it as a key to growth and necessary precondition to stay in power. Indeed, Russian natural monopolies *de facto* subsidise the rest of the economy through low tariffs and enterprise arrears. Again the final outcome of the regulatory process can be viewed as a resultant force of different interest groups' pressures.

Social attitude

Another considerations that to some extent affected the design of reform packages come from social attitude towards services provided by natural monopolies as public goods. For decades

economic agents get used to consume those services without taking into account their price (because it was low enough not to bother about) considering them as a natural duty of the state. Hence, remaining vital in providing necessities of life to people and being key inputs to the rest of the economy natural monopolies deserve a special attention when regulated.

It is not clear then what is the 'fair' price for such services from the socio-economic point of view because the criteria of fairness remain unclear (even theoretically) and are not stated explicitly in the law. What makes them biased in Russia is the very nature of regulation intended for balancing conflicting interests and taking into account electoral behaviour of the consumers.

3. Formal regulatory institutions

Due to the specific role natural monopolies' sectors traditionally play in Russian economy they were considered during the transition period as a buffers of stability meaning *status quo* bias in regulatory approach as well as structural policies. It was 1995 when the construction of the modern institutional basis for regulation started. In this section we first list the regulated spheres of natural monopolies' activity, then we analyse methods of tariff regulation as they are seen legally, and finally describe regulatory agencies and their responsibilities².

Scope of regulation

The Law on Regulation of Natural Monopolies defines 'natural monopoly' as a *situation on a goods market where from technological point of view (decreasing average costs of production) demand is satisfied more effectively in the absence of competition and there are no close substitutes for the goods produced by the subject of natural monopoly, so demand is inelastic in price*. It is worth mentioning here that neither returns to scope nor subadditivity of cost functions are ever used in legislature to define the borders of natural monopoly as a firm. Instead, it is stated in the law (original version dates back to August 1995) that the following particular spheres of natural monopolies' activities are regulated on the federal level:

- trunk pipeline transportation of oil and oil-products,
- pipeline transportation of gas,
- services for electric and heat energy transmission,
- carriages by rail,
- services of transport terminals, ports and airports services, postal services.

The last version of the law (March 2003) distinguishes between services for electric energy transmission, electric energy dispatching and heat energy transmission. What can be observed from the very list of regulated spheres is the fact that with one exception they all refer to infrastructure services. In the case of railway transport the price for the whole bundle of vertically integrated services is regulated. An intriguing amendment was 'railroaded' through the parliament in January 2003 – it constitutes a period of transition from the final (or end-user) price regulation to regulation of railway infrastructure services. But what makes this situation peculiar is the lack of explicit criteria to detect the end of such a period of transition.

The scope of regulation at the federal level in energy sectors is also broader than only regulation of tariffs for infrastructure services. In accordance with the Federal Law on Electricity and Heat Energy Regulation (April 1995) the suppliers' prices are also regulated³. Finally the Law on Gas Utilities (March 1999) expands the scope of regulation in gas industry beyond the natural monopoly spheres. As it is stated in the law the regulation of tariffs for pipeline transportation services *may be* substituted (by the government's decision) by the state regulation of prices for the ultimate consumer.

² See Berglöf et al (2003) for the description of general regulatory institutions in Russia.

³ For almost eight years state regulation of end-user tariffs for electricity and heat energy was substantiated by the existence of natural monopoly in these spheres. Only in March 2003 the obvious contradiction with the Law on Regulation of Natural Monopolies was eliminated though regulation itself even strengthened (see Table 2).

Along with price regulation of natural monopolies there are several other instruments to influence their performance such as:

- determination of the so-called 'non-excludable' consumers to be served mandatory and/or minimum (social) norms of their consumption,
- control for changes in ownership structure exceeding 10% of equity capital,
- control for access right to infrastructure to be provided on a non-discriminatory basis.

Ultimately, legal institutions allow regulatory authorities in Russia to pursue regulatory policies that penetrate in virtually all spheres of business of natural monopolies. Formally, the scope of regulation turns out to be large enough to have complete state control over these sectors of economy.

Methods of price regulation

Without loss of generality one may argue that for all the three natural monopolies the prevailing rule of tariff regulation is the cost-based regulation. As it is stated in the Law on Regulation of Natural Monopolies the when assessing the validity of costs regulator takes into account

- production costs, including wages, raw materials and overhead costs,
- taxes and other payments,
- value of capital, demand for investment necessary for reproduction, depreciation,
- forecasted profit,
- remoteness of consumer groups from the area of production,
- adequacy of quality of services to consumer needs,
- subsidies and other measures of the state support.

This method of regulation requires very detailed information about performance of the regulated entity and results in the particular formal procedures to be implemented. There is a list of special requirements for the natural monopolies to follow when submitting information to regulator. What needs to be emphasised here is the information on investment demand and necessity for extended reproduction.

Since internal funds historically proved to be the major source for investment in natural monopolies' sectors (88.7% in electricity, 54,3% in gas, and 94,0% in railways in 1999) tariff policy is organised in such a way that the planned profit included in regulated prices is determined by the planned (declared) investment but not by the cost of used capital. On the contrary, additional internal sources for investment are created via inclusion of specific 'investment component' on the tariff base. That makes reasonable for the regulated industry to lobby for the huge investment programmes, manipulate with accounting, make threatening gestures about the increasing risk of destabilisation, etc. Comparing to the case of over-investment in the presence of rate-of-return regulation (so called Averch-Johnson effect) we have here diffusion of investment between uncompleted projects as a result of such a 'cost-plus-investment based' regulatory practice.

Since it is not very difficult for the monopolist to justify the need for investment if regulator is poorly informed about the real state of affairs in the industry it has become the prevalent practice to inflate the investment programmes.

Along with this method there emerged in legislature some preconditions for the new approaches to regulation. Namely in accordance with the government's enactment on adoption of Basics for Pricing Electricity and Heat Energy (April 2002) regulator is free to use other methods such as tariff indexation (in case of high inflation) and setting ultimate consumer prices as a weighted average from the regulated and competitive prices on the wholesale market. In order to attract investors in the energy sectors regulators also have the right to implement rate-of-return regulation (where allowed rate of return on invested capital is limited by the discount rate plus 10% in case of rouble investment and LIBOR plus something in case of investment made in foreign currency). But the methodology elaborated by FEC has been never approved by the Ministry of Justice. In December 2003 the government order assigned

FEC to elaborate the Programme of changes in regulated electricity tariffs in 2005-2006 where rate-of return principles together with price-cap features (medium-run perspective) of regulatory scheme were declared. One may notice in this document that regional energy commissions are empowered to appeal for tariff revision on demand.

Admitting the importance of the emergence of such approaches to regulation one must confess that 'cost-plus-investment' principle in tariff setting dominated others during the period of time considered in this paper.

Who regulates what?

Hereinafter we describe changes in formal regulatory institutions occurred in Russia since 1995 when serious attempts to establish 'capitalist' regulatory system in natural monopolies' sectors were undertaken.

The main law that constitutes all the regulatory system was issued on 17 of August 1995 – several months after the Presidential Decree on the establishment of the Federal Energy Commission (FEC) as a regulatory agency in energy (gas, oil and oil-products, heat and electricity) sectors. It took one year to for the FEC to start its work in August 1996 and two years for the Federal Service for Regulation Natural Monopolies on Transport (FSEMT) as a transport regulator in September 1997. After a year of functioning immediately after the crisis FSEMT was liquidated and its functions were passed to the Ministry for Antimonopoly Policy (MAP). Interestingly in May 1999 FEC was abolished by the Yeltsin's Presidential Decree but this decree was interrupted in June 1999.

The 'new' approach to regulatory policy was clearly declared in one of the government enactment in just two months after Putin started his work as a prime-minister. The Government Enactment No. 1158 in October 1999 (On provision of economically sound principles of pricing natural monopolies' services) said that in order to *moderate inflation process* in the economy and provide economically reasoned principles of pricing natural monopolies' services Government assigns Ministry of Antimonopoly Policy and FEC to set these prices on the basis of *costs* of production, investment demand, depreciation, forecasted profits, distances to final consumers, correspondence of quality to consumers' needs, as well as government subsidies and other measures of state interventions in natural monopolies' activities. This enactment commemorated the end of prohibitively restrictive policy of 'freezing tariffs' that took place in Russia in 1997- October 1999 and was aimed at stopping the inflationary processes and providing an additional push to national industries (along with sharp currency devaluation), and meant the return to principles stated in the Law on Natural Monopolies. In the end of 2002 the Government Act on gas regulation is issued where FEC *and* the government regulate different tariffs in gas sector (government sets retail price while FEC is responsible for its structure regulating production, transmission and distribution components). In September 2001 Presidential Decree transferred additional regulatory power to FEC extending it to natural monopolies on transport, particularly railway transport.

To get deeper into details of tariff regulation it is useful to consider the special law on regulation in energy sector because it concerns about regulation of potentially competitive spheres that fall out the law on natural monopoly.

Table 2. Evolution of the Federal Law on Electricity and Heat Energy Regulation

	Status of Regulator(s)	Tariff revision timing	Principles of regulation
14.04.95	Establishment of FEC (with the government approving its status) as an executive agency to regulate tariffs FEC is financed from the federal budget	No less than 3 months	Energy is supplied to all consumers by fixed tariffs Tariffs are calculated and ratified on the basis of planned costs and profits

11.02.99	Legal status of RECs is specified FEC financed out of regulated tariffs	Preferential tariffs can not be financed by expense of other consumers	Openness of information about regulation Providing economic justification of costs of production, transmission and distribution
10.01.03	Government sets tariffs at the federal level, RECs – at the regional level	Setting tariffs annually before the federal budget on the next year is adopted by the federal (regional) parliament	Taking into account the performance during the previous period
26.03.03	Government <i>or</i> FEC are qualified as regulators Government defines the authority of FEC and its volume of power in regulation FEC and RECs are financed from the federal (regional) budget Federal (regional) government defines the procedure of setting assignments to budget from regulated tariffs to finance FEC (RECs)	No less than 12 months If regional tariffs exceed that set by the government additional expenses are financed from regional budgets	Regulation of tariffs can be different for volumes consumed within the social norm and above it Balancing economic interests of suppliers and consumers on the basis of availability of energy and reasonable rate of return on capital invested production, transmission and dispatching
07.07.2003	Government <i>or</i> FEC coordinate RECs' decisions Disputes on tariff regulation are considered by arbitration	Government may set tariffs differently for different periods of time, consumer groups, regional and other conditions	

What makes things even worse is the presence of another agency, namely Ministry of Energy (Minenergo) that is responsible for the strategic investment policy in electricity and gas sectors. As for the railway transport investment policy used to be an integral part of the state policy carried out by the federal Ministry of Railway Transport (MPS).

One may conclude from this description that at the federal level formal institutional framework allows for the presence of 'double regulator'. Legislative boundaries on regulatory decisions are very unclear – distribution of powers between different de jure regulatory agencies is vague leaving much space for discretionary regulatory policies. To complete the picture it is worth mentioning here that prescriptive methodology of regulatory procedures to follow by each regulatory agency is elaborated and approved by the Government. Formally, as it is stated in the Government Act on gas regulation, regulation of gas tariffs is based on instructions approved by FEC and coordinated by the Ministry of Economic Development and Trade (MERT)⁴.

As a result formal regulatory institutions in Russia can be characterised as unstable and soft. From the legislative point of view there exist multiple regulation when the regulatory powers are distributed between FEC, MAP, MERT, MPS, Minenergo with the Government on the top.

As structure and institutions of natural monopolies' markets are greatly inherited from the Soviet planning system the approach to regulate them remains to be 'cost-based' by nature. Besides, the co-ordination of natural monopolies' tariffs bears resemblance to what used to happen in Soviet times when enterprise got used to ask for more having in mind the possibility for their claims to be put down. Whether or not a regulatory measure was justified from the economic point of view was of little relevance for policy-makers' behaviour because regulator acted within the framework of regulatory institutions. It is a common practice (not only in Russia) than regulator rejects the regulatory measure though it is economically reasonable, or may approve or continue regulation of a certain type though economic justification is not

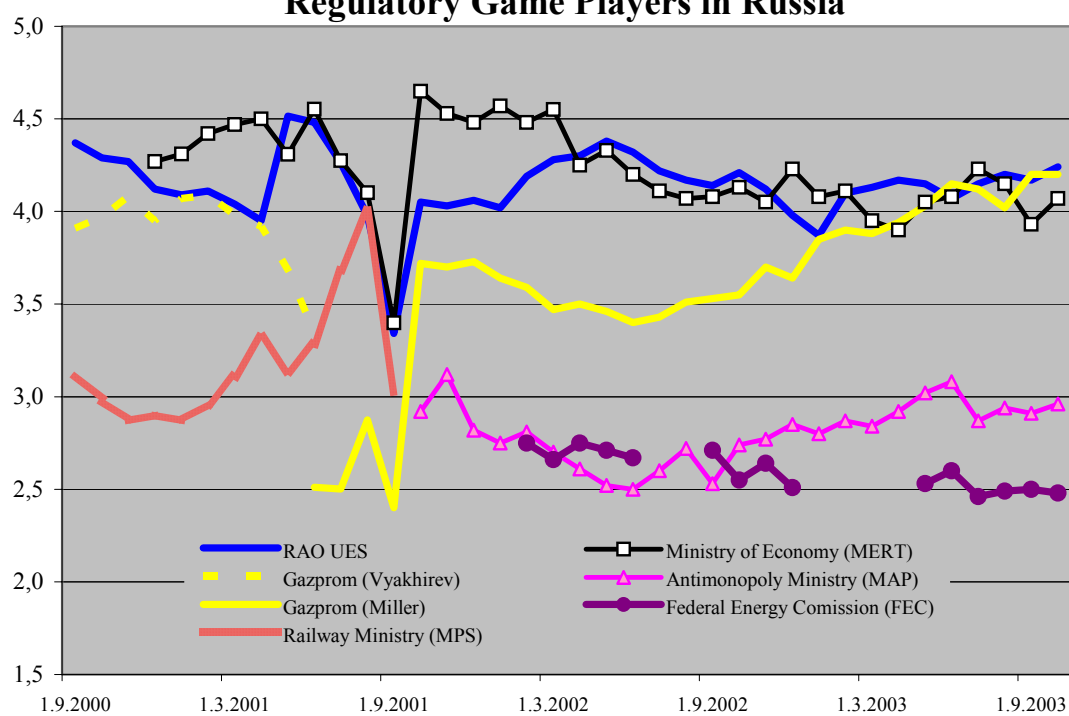
⁴ The particular role of MERT in the natural monopolies' regulation is to be explained further.

given if institutions are weak. What does the weakness of the current regulatory institutions in Russia imply and how has it influenced regulatory outcomes – these are the questions to be answered in the rest of the paper.

4. Political Economy Context of Regulation

In order to comprehend the real state of affairs with regulatory procedures in Russia and reveal *de facto* 'rules of the game' it turns out to be of great importance to consider the political economy context first. The very nature of regulation requires an elaboration of rules and procedures to implement policy of checks and balances. It is the regulator's duty to balance different and mutually exclusive interests of more or less powerful pressure groups. In the presence of information asymmetries between the regulator and natural monopolies (that is peculiar in worldwide regulatory practices and especially relevant in Russia) another type of constraints – *political* – could seriously affect regulatory decisions. It means that regulator deals with information that turns out to be difficult (or too costly) to audit or verify. In case of information-intensive regulatory rules (as cost-of-service regulation appears to be) relative bargaining powers of regulatory game participants matter.

Figure 1. Relative Lobbying Effectiveness of Regulatory Game Players in Russia



Source: Agency for Economic News, Nezavisimaya Gazeta

We base our estimations of relative effectiveness of returns on lobbying efforts (and consequently, relative weights of different pressure groups interests) on the data provided by the Agency for Economic News. It used to take regular surveys based on (mostly regional) experts' opinions about lobbying potential of different policy makers and natural monopolies' CEOs (see Fig.1). The survey was named "Best Lobbyists in Russia" and aimed at monitoring the professionals' (political observers, political scientists, economists, public figures – 122 in total) opinion reflecting public opinion about and electoral resource of a particular political figure.

We have data only for three years (from October 2000 till October 2003). During the first phase of survey the rating of 20 leading politicians was constructed. Since October 2001 the new methodical principles are used by the Agency for Economic News to reflect the relative rather than absolute powerfulness of policymakers and 'professional' lobbyists, so excluded from the list were president and prime-minister. We had to smooth very volatile data in sum-

mer 2001 by using three months averages. The sharp drop in everybody's influence is an outlier here. Partially, it may be explained by the events that took place in America in September 11, 2001, partially because of presidential attempt to establish FEC as a 'mega-regulator' for all the three natural monopolies.

What can be noticed from the figures is persistent gap between RAO UES and Gazprom top-managers and the minister of economy on the one hand and appointed regulators on the other. Secondly, soon after the FEC becoming more powerful (on paper) its head joined the rating list of lobbyists (together with the MAP's leader). Thirdly, the most influential member of the government participating in the regulatory process turns out to be the head of MERT. Finally, the FEC's leader is listed in the rating only from time to time so his lobbying potential is estimated as non-significant.

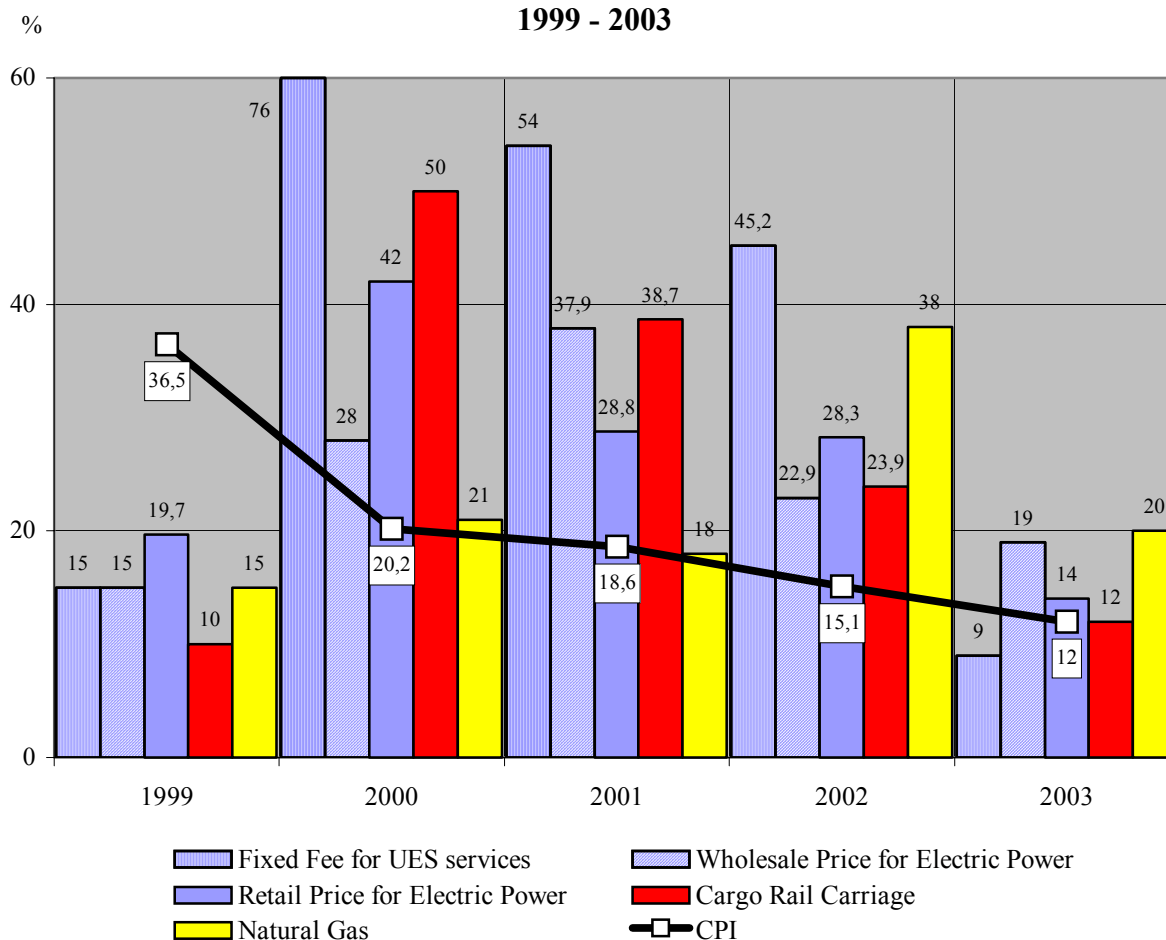
Another possible procedure to reveal relative importance of MERT and FEC as regulators could be an analysis of distribution of duties and overall involvement in reform process. It will be shown in Section 6 that not only formal status of MERT (being a federal ministry) dominates the FEC's status (being a federal commission) but also the very design of government's orders when the former is assigned as a leading executor confirm the superior role of MERT in regulatory process.

By no means such a bias in the distribution of power between regulatory agencies could but influence regulatory policies and outcomes.

5. Regulatory policies and outcomes

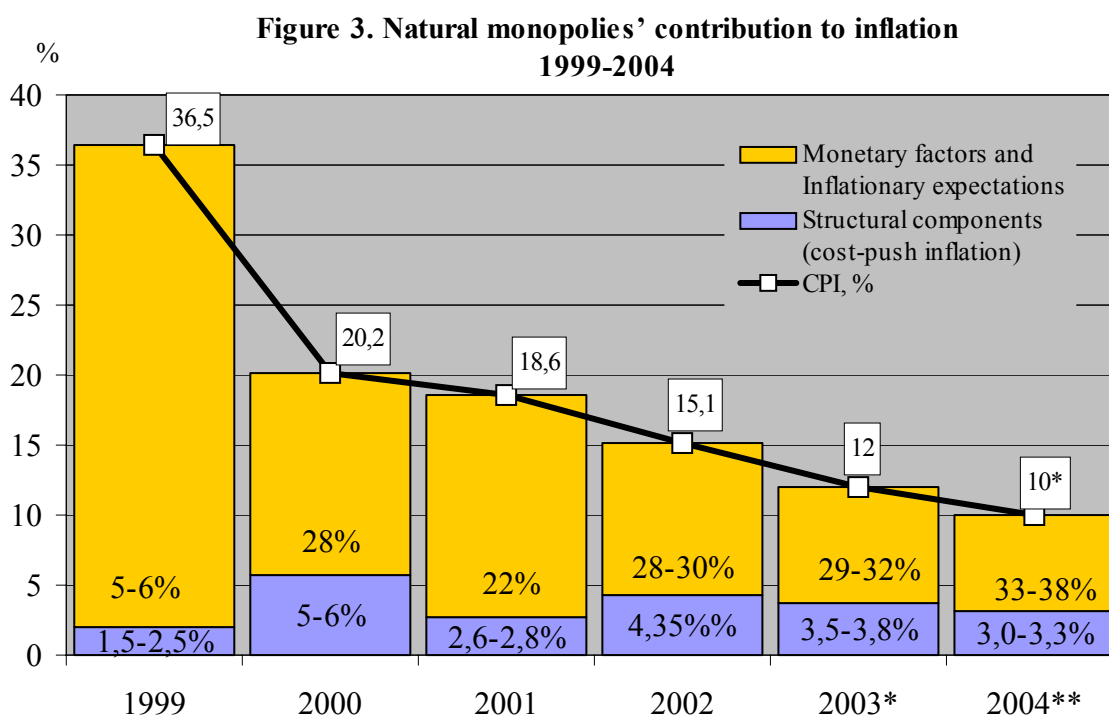
As was mentioned in Section 3 until October 1999 Russia had relatively low natural monopolies' tariffs. In real terms all the regulated tariffs happened to tumble down in 1999 (see Fig. 2.).

**Figure 2. Inflation and Natural Monopolies' Tariff Increases
1999 - 2003**



Source: Ministry of Economy

That situation could not but undermine the performance of natural monopolies and gave birth to serious public discussions about the inevitability of new approaches to regulation in those sectors.



Source: Goskomstat, Ministry of Economy, ICSS, author

Along with its natural assignment (balancing interests of consumers and producers) tariff regulation of natural monopolies called at inflation stabilisation and formation of necessary conditions to start structural reforms.

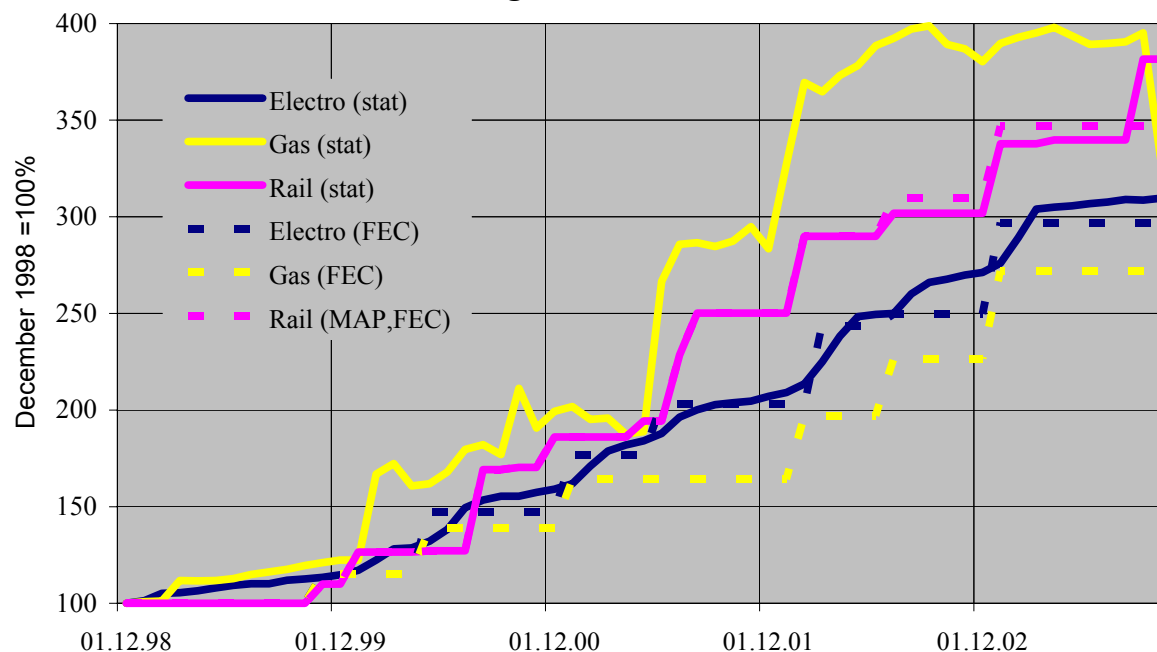
It was perceived by the government that natural monopolies' tariff increases account for approximately one third of inflation in Russia. It varied from year to year but remained significant enough to consider the regulation of natural monopolies' tariffs as one of the instrument to control inflation⁵.

In fact regulatory policy changed significantly in Russia in 2002 then the government adopted the policy of setting natural monopolies' tariffs on the following year before pushing the budget through the Parliament. Formally it is the Russian Ministry of Economy that is responsible for the macroeconomic indicators to be on a targeted levels. And CPI appears to be very straightforward and accountable parameter that can be used as an indicator of not only economic but bureaucratic performance. The natural question 'why at all care about inflation?' can be viewed as being once answered and makes inflation parameter given within the regulatory game in Russia.

In order to make some positive conclusions about the government priorities in regulating natural monopolies, namely whether it should use inflation to regulate natural monopolies on the price-cap basis or use these price-caps to target inflation we consider a political economy context.

⁵ It is worth saying here that due to complicated tariff setting system in Russia the true contribution of natural monopolies' (or structural) factors to overall consumer price level increase is difficult to assess. Moreover the lack of fully independent research centers in Russia makes all the available estimations biased. For instance, industrial lobbies could possibly support those researches that tend to overestimate the real dependency of inflation index on regulated tariffs in order to increase their bargaining power in regulatory game. It could also turn out to be fruitful for the Ministry of Economy (being in charge of the CPI forecast) because it helps to provide an additional argument in favour of keeping an eye on regulatory agency. Anyway all the figures presented in Figure 3 'participated' in the regulatory game and played at least their political roles.

Figure 4. Regulatory Desions and Factual Price Responces in the three Regulated Industries



Source: Goskomstat, FEC

It can be seen from the data for the post-crisis period (1998-2002) that starting from 2000 till now natural monopolies tariffs experience higher growth than PPI index. When we compare Data in Table 3 with what the two graphs depict we shall see the difference between the dynamics of regulated tariffs (set by regulators – Federal Energy Commission and the government) and factual price increases in regulated industries that reflects the fact that there are also independent (and unregulated) suppliers in those industries and, as in case of power energy, only part of the final tariff is subject to regulation. We will focus on the regulatory outcomes first (see Table 3 below) where the chain indices of regulated tariffs' increases are shown in bold.

Table 3. Natural Monopolies' Initial Bargaining Positions and Regulatory Decisions

		Date	FOREM		Gas	Rail	
2002 (I)	Natural Monopolies	11.2001	44		37,6	66	
	Government	12.2001	35		35	35	
	MERT	01. 2002	32		35	26	
	FEC	02-03. 2002	20		20	14	
2002 (II)	Natural Monopolies	06. 2002	51,9		33,4	11,4**	12,3
	FEC	07. 2002	2,4		15	6,8	
2003	Natural Monopolies	11. 2002	-		37	32,6**	20,6
	FEC	11. 2002	15,38	26,01*	34,4	13,8	
	MERT	11. 2002	15,88	22,74*	20	12	
	Government	12. 2002	14 (on average)		20	12	
2004	Natural Monopolies	05. 2003	18		43	25,6**	14,7
	MERT	05.2003	12		20	12	
	FEC	05. 2003	11-14 (on average)		20	14,7	
	Government	05. 2003	13 (on average)		20	12	

Source: MERT, FEC, Vedomosti, AK&M

* - including cumulated misbalance in payments

** - initial bargaining position revisited shortly

One may notice that the more often they were revised the greater was the resulting index. For example from 2000 to 2002 cargo rail tariff was reviewed 9 times and came to 2.8 during these three years.

For example, in 2002 Gazprom planned to increase its operation costs by 19% and invest up to 161 bln rouble whereas MERT agreed only on 16% and 146 bln rouble respectively. Rough estimated value of 'taking care about tariffs' or opportunity costs of 'not lobbying' in 2002 would have been about \$100 mln losses in terms of Gazprom's net profit if domestic tariffs had been increased by 30% instead of 35%.

What is important about regulatory procedures in general and especially in Russia is the asymmetry of information about actual costs, technology (that determines the distribution of shared costs), real depreciation of the fixed assets (that enables to assess the reasonableness of investment programmes), etc.

We have data for 2002-2004 years on initial bargaining positions of tariff indexation offered by regulated industries and considered by the Federal Energy Commission at the first stage of the regulatory process. Three major natural monopolies submit most likely separately their offers about tariff increases and their investment plans for the following year to be justified by the Commission. The only instrument it has is the rate of return rule, so it turns out to be crucial for the monopolist to ask for the higher rate of return on capital and to justify the higher investment programme the better. After being revised and approved the new (usually lower) price indices are considered by the government. It is the government who cares (at least should care) about both consumers and producers. In this sense the role of FEC is more or less supplementary or technical.

The government's decision in December 2002 on 14% increase in electricity tariffs in 2003 (see Table 3) proved to be misinterpreted because of its ambiguity. It was the first time when the government attempted at controlling the *basket* of electricity tariffs in Russia by setting the limit on *average* (or overall) increase in prices. Interestingly the exact formulation (stated in the government's protocol) appeared to be lack of this crucial word 'average'. That caused a certain political pressure (from the State Duma and the Office of Public Prosecutor that insisted on 14% as an upper bound for electricity tariff in every region without exception) on FEC who supported certain REC's in their attempts to allow for higher tariffs in their regions. Such collusion was partially smoothed in the next year but not completely because the problem here lies far behind the mere misinterpretation of the government's wish. This case highlighted the conflict between the tendency to adhere to credible and transparent regulatory policy (for instance, as an instrument to stabilise inflation) and its effectiveness in every particular situation.

Admitting the importance for the government to follow the clear rule of tariff regulation and the need of simple indicator for the purpose of accountability one should always bear in mind the complicated regional structure of electricity tariffs in Russia. It's not an easy matter to interpret the average tariff across different consumer groups and territories even if it is calculated. But as a political target it has become absolutely crucial as a way to roughly monitor the social consequences of energy sector reform in Russia started in 2003. Very in line with the President's message to the parliament in May 2003 where a clear statement about the speed of tariff indexation was made (natural monopolies' tariffs were not to exceed inflation) both regulators and regulated industries lowered their demands and agreed to use aggregate tariff targets. The signal was received and responsibility of regulators for the end-user prices increased.

6. Means and ends of natural monopolies' reforms

The outcome of structural reform in terms of tariff increases should not be mixed with the regulatory policy.

The Law on Regulation of Natural Monopolies (1995) and the creation of the Federal Energy Commission (FEC) as a regulatory agency in energy sector (1996) could not change the situation with leap-frogging tariffs significantly. It would not be an exaggeration to say that at least Gazprom and MPS were reputed to be ‘states within the state’, claiming an important role in economy and receiving support at the highest political levels (up to premier-minister in case of former Gasprom top-manager Chernomyrdin and first deputy premier-minister in case of MPS leader Aksenenko).

The beginning of Putin's era (August 1999 when he was assigned prime-minister) commemorated the start of ‘self-reform’ processes in power industry and railway transport. It has become commonplace that without structural reforms these sectors could face the investment shortage that could stop the further infrastructure development and damage economic growth. The two reform packages adopted by the Parliament consist of a number of structural measures (either vertical separation as in case of electricity sector reform or separation of accounts between different business units as in case of railway reform) aimed at increasing transparency of the regulated entities and providing the room for competition.

Table 4. Comparison of Natural Monopolies’ Reforms

	Electric Energy	Natural Gas^(project)	Railway Transport
Declared Reform Priorities			
Economy wide effects	Providing <i>sustainable</i> functioning and development of economy and social sphere	Providing <i>sustainable</i> economic development	Meeting the increasing demand for railway transport services
Efficiency	Increasing energy production and consumption <i>efficiency</i>	Increasing <i>efficiency</i> of gas industry	Forming unified <i>effective</i> transport system
Consumer surplus		Reducing consumer costs	Reducing economy wide railway transport costs
Quality	Ensuring regular and reliable supply of energy	Increasing quality of services	Increasing stability, safety and quality of railway transport services
Structural changes	Stimulating energy saving	Creating conditions for rational fuel and energy balance	
Declared Reform Goals			
Unified infrastructure	Preservation and development of unified energy infrastructure, including transmission networks and dispatching	Preservation in the long run the unified transmission system as an infrastructure monopoly	Preservation of the unified state railway infrastructure and dispatching system
Competition	Promotion of competitive markets for energy (where technically feasible)	Creating favourable conditions for competition (where technically feasible and economically reasonable – particular in gas extraction and distribution)	Promotion of competition in freight carriages, repair works, passenger carriages and services Denial of merges between natural monopoly’s and potentially competitive spheres
Network access	Ensuring non-discriminatory access of producers and consumers to infrastructure services	Ensuring non-discriminatory access to infrastructure	Ensuring guaranteed non-discriminatory access to federal railway infrastructure for independent freight and passenger operators rolling stock owners
Cost minimisation	Introducing effective cost-minimising mechanism in electricity generation, transmission and distribution	Gradual growth of domestic gas tariffs up to \$36/1000m ³ in 2006	Removing “social infrastructure” and non-core businesses to reduce nonproductive costs

Investment	Stimulating introduction of new generation and transmission capacities Increasing industry financial performance	Ensuring financial stability and attractiveness for investment	Increasing attractiveness of railway transport for investment
Cross-subsidies	Step-by-step elimination of cross-subsidies between different regions and consumer groups	Step-by-step elimination of cross-subsidies followed by deregulation of tariffs for retail consumers	Step-by-step elimination of cross-subsidies between freight and passenger, export-import and intra-country transport
Regulatory reform	Reforming regulation and supervision systems, specification of regulator's status and competence	Reforming price-setting and taxation mechanisms for greater predictability and transparency, rejection of outdated regulatory practices	Improving tariff policy
Natural gas market de-monopolisation	Demonopolisation of fuel market for thermoelectric power stations	Creating preconditions for natural gas market development (with adaptation period)	-
Social aspects	Creating the low-income consumers support system	Defending socially sensitive consumers from market risks	Providing full coverage of suburban passenger transport losses from state budgets, increasing motivation and social protection of railway workers

Source: Basic Directions of Energy Sector Reform, Programme of Socio-Economic Development for Mid-term Outlook (2003-2005), Concept of Railway Transport Reform

As was mentioned above domestic natural gas prices in Russia remain to be at a very low level (about \$21 per 1000 m³ that is even lower than pre-crisis dollar prices in 1998 - \$35). This crucial fact makes domestic supply unprofitable and is regarded as a keystone of the gas sector reform. In turn cheap and still abundant natural gas determines to a large extent electricity prices at least in the European part of Russia. Together with the fact that hydro and nuclear generation account for only about one-third of the country's electricity supplies this opens the room for competition in generation market. So the model of vertical separation is to be realised in Russian electricity sector (see Table 4).

What ensured reform project success comparing to the first attempts undertaken in mid-90s) was greater involvement of natural monopolies in reform design. As a result both electricity and railway reform strategies approved by the parliament so far were based on respectively RAO UES and MPS proposals. A brief comparison of natural monopolies' reform plans (Table 4) reveals the reflection of corporate interest of reformed entities⁶. This comparison does not allow us to address sequencing issues that turned out to be crucial in designing consistent reform packages. The question of interference of natural monopolies' reforms (including political economy aspects) requires special attention that lies beyond the scope of this paper.

The comparison provided in the Table 4 shows that the general idea behind the reforms in the natural monopolies' sectors is to improve their functioning by providing adequate incentives to reduce costs and enlarge output (that in case of increasing returns to scale serves the same purpose). This objective is to be attained with the help of structural and behavioural measures. The former include the separation of natural monopolistic forms of activity (including the transportation of oil, gas and electric power, services of the railway transport infrastructure, traffic control, airport and sea port services) from potentially competitive forms of activity (extraction and transportation of oil and gas, generation, marketing and metering of electric power, transportation by air and rail, etc). Admitting the importance of such measures we mostly focus on the latter, that are closely connected with *regulatory reform*.

⁶ Due to the absence of approved reform plan for Gazprom we cite the government Programme of Socio-Economic Development for Mid-Term Outlook (2003-2005).

Who does the reforms?

Hereinafter we describe the *de facto* distribution of powers in implementation of the particular reform plan – electricity sector reform. Two of natural monopolies, namely RAO UES and Russian Railways, proved to play the major role in elaborating the set of reform measures. It was the Ministry of Economy (MERT) and Ministry of Railways (MPS) that defended the variants of reform strategies proposed correspondingly by the RAO UES and railway monopolist (the latter being undistinguishable from the MPS during the first stage of railway sector reform). In the absence of any practical improvements and approved plans it seems too early to consider seriously declarations and competing strategies in the gas sector reform. Russian Railways have been gradually self-reforming themselves and fully account for any consequences of sorts.

Table 5. Distribution of responsibilities between different agencies in implementation of electricity sector reform

	Ministry of Economy	Ministry of Privity	FEC	MAP	Ministry of Energy
Institutions	10				3
Structure	4	6	1		
Regulation	2		9	1	1
Competition				5	
Technology					4

Source: Government Ordinance No. 865-r, Dated June 27, 2003 “Plan of Actions for Restructuring the Electric Power Industry for 2003-2005”

We find it worth to consider the electricity sector reform plan in greater details because this helps to shed some light on the relative powerfulness of different government agencies. It is possible to separate out at least five major components of the reform:

- creation of new *institutions* (rules and enforcement mechanisms, shaping the competitive wholesale market etc.),
- determination of the industrial *structure* (vertical restructuring, horizontal merging, corporate restructuring, etc.)
- establishing of new *regulatory* methods and mechanisms (elimination of cross-subsidisation, accounting standards to reveal information for the regulatory purposes, pricing issues)
- promoting and defending *competition* (access to infrastructure, elimination of monopoly power, etc.),
- provision of technological stability during the period of transition to the competitive model of the market for energy.

One could expect special functions of the state correspond directly to the responsibilities of particular agencies. It is seen from the table below that real distribution of powers to implement reform does not fully correlate to the implied distribution of duties of the four ministries and Federal Energy Commission.

For example, Ministry of Economy elaborates the order of cancellation of decisions made by Regional Energy Commissions. In addition it determines the procedure, terms and conditions for collection of the fee for services related to organization of functioning and development of the Unified Energy System of Russia. In particular it lists the electric power grid facilities and electric and thermal power generating facilities for whose development the investment component is spent. This component is included in the fee for the services related to organization of functioning and development of the Unified Energy System of Russia. It means the Ministry of Economy takes some regulatory functions out of implied FEC’s duties. Interestingly that determining the scope of authority of the federal body of executive power regulating natural monopolies (that is Federal Energy Commission) as well as the procedure for covering the costs of their maintenance is up the FEC itself!

As a result regulatory system in Russia will presumably remain discretionary serving current interests of the most powerful groups (ministries', consumers' or producers' lobbies).

New challenges for regulation in Russia

According to the experience of Russia and other countries that have carried out, or are in the process of carrying out structural reforms, the creation of a competitive environment in potentially competitive spheres of activity is impossible without enacting behavioural measures, including, in particular, improving efficiency of natural monopolies by adopting incentive regulatory schemes.

We particularly interested in natural monopolies' regulatory reform that not only has to accompany any structural changes in these industries but also provide necessary conditions for those changes to be incentive compatible. Despite admitting the ineffectiveness of current regulatory practices and importance of new regulatory system little concrete can be found in reform packages about the way it should be organised.

Judging by international experience (though not always convincing) never infrastructure sector reforms were implemented successfully should they not been accompanied by adequate changes in regulatory mechanisms. From the regulatory point of view more transparent and well understood structure of financial flows of regulated entities (which is clearly higher in case of demonopolised industry) potentially favours more subtle and efficient regulatory methods to accompany competition policy. However, it is only possible to take maximum advantage from the increased transparency if regulatory mechanisms are adequately established. Intuitively, one can expect regulatory institutions to be congruent with the institutional settings that arise from the newly adopted reform packages in their ability at least not to hamper the reform process. That is likely to result in the regulatory reform agenda.

Traditional economic theory of regulation suffering from a normative bias has little predictive power when the need to eliminate huge relative price discrepancies goes along with structural and institutional changes. It is the case of Russia where, when regulation is politically decided upon and confirmed in the legislature, human self-interests (or corporate interests) rather than public interest are likely to be a leading principles underlying regulatory decision. Different pressure groups endeavour to attain special treatment and 'weak' regulation is a particularly well-suited institutional arrangement for realising this goal. One may imagine situation when certain regulatory arrangements could further lobbying as a 'natural' mutually beneficial outcome both for the regulator and monopoly to adjust to such a system. It comes as no surprise that little can be found in Russian infrastructure reform packages on regulatory reform. Russian regulatory institutions remain informal, incomplete, and non-transparent promoting implementation of politically dependent and discretionary tariff regulation.

Taking into account institutional, structural and political features of natural monopolies' in Russia the need for new regulatory approach has become obvious. Advantages of widely used abroad price-cap regulation in the light of reform process can be broadly discussed on the theoretical basis. But the regulatory literature on this subject is far from being persuasive. On the contrary in practice one may observe an intriguing emergence of the 'demand' for such a regulatory policy from the natural monopolies' side. For instance, RAO UES proclaimed cost reduction policy as a corporate strategic priority that could (but not necessarily) be accompanied with an adequate regulatory policy at the federal level. This demand for and readiness to follow price-cap framework was not only declared but also documented in several agreements and even started to be implemented in five regions since November 2003. Energy monopolist found it rational to unilaterally decrease its tariffs and then commit to operate in these regions under new price-cap for electricity that is 20% lower than set by the federal regulator (FEC). One possible justification for such a policy comes from the notion about future reform plans that imply the emergence of competition in energy generation. So this is a possibility to adhere to administrative measures as an instrument to increase competitiveness of generators that now are governed by RAO UES but supposed to be independent in the nearest future. Another justification related this policy to the end of political cycle because those measures

were undertaken very on the eve of new elections to the parliament. Having in mind possible political ambitions of the RAO UES leader this 'pro-consumer' policy founds another explanation.

The existing economic literature suggests the dominance of two contending theories of political economy of regulation, namely, the Public Interest Theory, that explains in general terms that regulation seeks the protection and benefit of the public at large, and the Chicago theory, where regulation does not protect the public at large but only the interests of groups.

In order to assess the comparative 'attractiveness' (in terms of return on lobbying efforts) of the 'cost-based', rate-of-return and price-cap regulatory schemes one may follow the approach used in Pint (1992). The model in Pint (1992) analyses a multiperiod framework with stochastic costs to examine the effects of changes in the timing of regulatory hearings and in the number of time periods for which cost and profit information is gathered. Rather one may explicitly model lobbying behaviour of the regulated firm in order to control for the trade-off between lobbying and cost-minimising activities that we consider as substitutes. Weisman (1993) proves that the hybrid application of cost-based and price-cap regulation may generate qualitative distortions greater in magnitude than those realised under cost-based regulation. He concludes (also in Weisman (1993)) that in practice price-based regulation may be welfare-inferior to cost-based regulation.

There is some disagreement in the literature as to how rate-of-return and price-cap regulation should be characterized. Schmalensee (1989) uses the static characterization of cost-plus and price-cap regulation and does not explicitly model rate-of-return regulation. Cabral and Riordan (1989) and Clemenz (1991) model ROR regulation as holding rate reviews at fixed intervals and PC as allowing the firm to petition for a rate increase if and when it so chooses. Pint (1992) portrays ROR regulation as giving the firm the right to initiate rate review, while under PC regulation reviews are held at fixed intervals. The empirical works of Joskow (1974) and Fitzpatrick (1987) support the notion that traditional ROR regulation gives the firm considerable power to manipulate the timing of ROR reviews and comports with the modelling of Pint (1992).

In contrast to rate-of-return regulation, pure price-cap regulation would break the linkage between the firm's costs and the process by which the regulator sets rate. Among other things, pure PC regulation would induce the firm to produce in a cost-minimising fashion, to undertake cost-reducing innovation in the same manner as an unregulated firm, and to diversify into a competitive market if and only if diversification is efficient. But what is more important in case of Russia price regulation could potentially break the link between lobbying efforts and regulatory outcome since consumers' interests are presented explicitly. If we speak about Russia the major concern of the government (that is reputed to be the 'regulator of last resort') proves to be inflation measured by CPI. We have to always bear in mind that in recent years so called 'structural' component of inflation (that is inflation induced by natural monopolies' tariff increases) accounts for one third of the CPI. Since the government is very keen on keeping macroeconomic situation manageable at least in the short run (not only in Russia are governments short-sighted) and inflation to be the key parameter, tariff regulation has become one of the most important way to cope with macroeconomic stability. That is why price-cap regulation could kill two birds with one stone: enable to reduce lobbying and force the monopolies to undertake cost-minimising rather than lobbying efforts and to monitor and predict inflation more precisely.

As was pointed out in Braeutigam, Panzar (1993) the transplantation of the price-cap scheme in the US has adapted to the political and constitutional landscape. In practice most regulators adhered to the combined PC scheme with rate-of-return criteria. They also view the PC regulation as a transitory step towards full deregulation and competition. On the way to more efficient and stimulating regulatory practice the invention of mixed approach could be politically feasible and desirable. It was noticed in the same paper that most of the PC plans actually implemented in the US involved provisions for adjusting prices if the firm's earned rate of return

falls outside of a certain range. Such a mixture of a cost-based and incentive regulation was called *sliding-scale* (SS) regulatory scheme. The regulated firm is allowed to retain all earnings under PC rates as long as the rate of return is less than some *ex ante* and *explicitly* specified amount (in percent). The firm is also allowed to keep a portion (for instance, one half) of any further earnings for a rate of return between that level and some higher level (also explicitly specified *ex ante*). Depending on the relative flexibility of SS scheme there could be several ranges of allowed rates of return with different profit sharing rules. Were the regulated firm to earn more than the upper bound of this (known) scale it would be required to issue a refund to customers (usually in the form of reduced tariffs).

It is commonly asserted that under sliding scale regulation the basic advantage of PC scheme is eliminated, that is it is still necessary to calculate firm rates of return. All the drawbacks of ROR approach (information asymmetry, accounting problems, monitoring costs and lack of expertise) apply here. What makes situation in Russia even worse off is the absence of any explicit sharing rule in legislature. Until 2003 there were neither law nor stable regulatory practice that could guarantee the regulated firm a certain amount of profits being retained for at least two or three years. The state had the power to expropriate any share of extra profits by simply lowering tariff increases for the consecutive time span. As a result natural monopolies resorted to cost information hiding, misreporting, cost padding, lobbying tariff increases based on poor performance observed by the regulator, etc. The defects of such a regulatory system were partially remedied by *de facto* implemented combined regulatory scheme. We call such a scheme as *implicit sliding scale* since it still contains no explicitly stated profit sharing rule but breaks at least partially the cost based nature of the prevailing regulatory scheme.

7. Concluding remarks

Our analysis of institutional and political determinant of natural monopolies' responses to the regulatory environment has shown that regulatory institutions are weak that allows for multiple regulators with often confronting goals. The prevailing *de jure* regulatory scheme is the cost-based regulation that makes current regulatory mechanism being prone to lobbying. Moreover current economic situation, political and institutional configuration force the government to regulate natural monopolies' tariffs taking into account inflation targets that breaks the allowed cost-based nature of this rule. Ultimately the realised regulatory scheme does not prove to be more incentive intensive. The reasons for that are: underdetermined timing structure of tariff revisions and remaining uncertainty about at least medium-term projections of tariff increases. The current (cost-based) regulatory mechanism in Russia makes investment almost costless (because of the existence of so called 'investment component' is still included in tariffs). That enables natural monopolies to seek for the political and informational rents since price caps are set *ex post* allowing for the implicit rather than explicit profit and cost sharing.

These circumstances cannot but lead to soft budget constraints of utilities causing their underperformance. As a result Russia has an obscure tariff policy that hampers the progress of reform and favours lobbying rather than restructuring.

Among possible political recommendations there could be an introduction of the explicit profit sharing rule either in the form of pure price-cap regulation or in the form of 'sliding scale'. That could decrease the incentives of the monopoly to incur lobbying costs. The single independent regulator could be more preferable than the regulatory 'ladder' with mixed responsibilities.

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