

# “The Virtual Economy Revisited: Resource Rents and the Russian Economy”\*

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Our 1998 article entitled “Russia’s Virtual Economy” described the economic system of the 1990s. At the heart of the virtual economy thesis were two basic questions: (1) Where is value in the Russian economy created? and (2) How is that value distributed?

Most of the economy, noncompetitive and even value-destroying, survived by transfers of value from the resource sectors. The transfers were effected by elaborate and curious schemes of barter, mutual offsets, arrears, and other nonmonetary settlements. The noncompetitive enterprises lay claim to the value transfers by virtue of their “relational capital,” the political and personal goodwill they had with government officials and other business owners. Because investment in relational capital was an alternative to investment in physical and human capital, it was a major impediment to true restructuring.

Those same themes are still relevant today. The resource sectors, especially oil and gas, are even more central in the creation of value. Distribution of that value remains critical to Russia’s political economy. Relational capital continues to play a key role. And the manner in which value is redistributed has a negative impact on investment.

Thus, as much as things have changed since 1997-98, Russia remains focused on — to use the words of economic historian Gavin Wright — “divvying up the bounty rather than creating more bounty.” The challenge for Russia is to reverse those priorities. It must turn its attention to the task of creating the bounty.

Let us begin by estimating the size of this bounty. What is at stake?

## *The Size of the Rents*

Traditionally, the thinking on the issue we are discussing is couched in terms of rents. This terminology is unfortunate, because it is value-laden and even a bit misleading. What is really important is the surplus that is obtained from the production of gas and oil. We will use the term “rent” but make the meaning precise.

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The conventional definition of rent is the revenue received from sale of a resource minus the cost of producing it. It says rent is equal to economic profit, that is, revenues minus economic (or opportunity) costs.

This definition is rarely applied rigorously. For example, begin with the unit price. It is not the price the resource is actually sold at. It is the market price. If the output is sold below the prevailing market price, then some of the rent is already being shared. It is a transfer to a particular group. The consumer receives a portion of the total rent equal to the difference between the market value of the resource purchased and the price actually paid for it.

Next, the definition requires that we subtract costs of extraction. Not necessarily actual (booked) costs, but what we refer to as natural costs — those costs truly necessary to the production of the resource. The costs of production can be artificially inflated by excess payments made to the material inputs suppliers, providers of goods or services used in the production of the resource, or workers. (One need think only of the importance of construction as a vehicle for inflating costs.)

The extra cost should not be subtracted from revenues to get rent. It is part of the rent. It represents a portion of total rent created by this activity. The owners might think of this as a transfer from themselves to others, but the key point is that this is part of the total surplus that results from production. It represents income to agents in the Russian economy.

Therefore, measuring the proper market price and the proper natural cost of production, and knowing the quantities produced of the commodities, we compute total rent. Figure 1 shows what it looks like, from 1970 to present:



FIGURE 1

The next figure (2) breaks the total rent down into oil and natural gas. (Note that this is a stacked chart.)

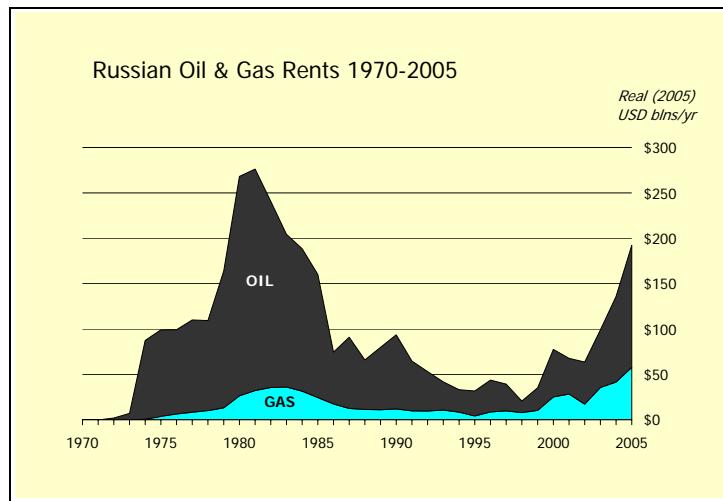


FIGURE 2

There are many thought-provoking elements to this picture. Let us emphasize just four:

- the huge size of the oil and gas rents (at their peak, they were 40 percent as large as GDP)
- their volatility — from a high of \$270 billion to a low of barely \$25 billion
- the growing importance of gas — since 1992 it accounts for one-third of total rents
- (something that is not directly evident from chart but is clear from the underlying data) the fluctuations in the price of oil dominate all other factors

A historical comparison of oil and gas rents with Russian GDP since 1970 is illuminating (figure 3).

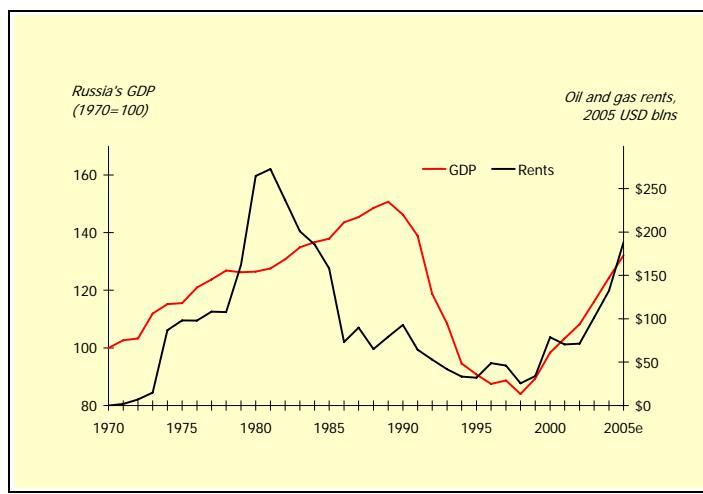


FIGURE 3. Oil and gas rents and GDP in Russia, 1970-2005

One can see how movements in Russian GDP are related to fluctuations in rents. The collapse in rents in the 1980s was primarily due to the collapse in oil prices. But disorganization of production also played a role. This is important for thinking about the future.

So, again, this is the bounty being fought for. The fight is about more than just oil export dollars. It is about total rents from oil and gas production.

### *Components of Rent*

The total rent is distributed (“deployed”) in various ways. We have already identified two: price subsidies and excess extraction costs. There are others.

Taxes are one. Here, we need to distinguish between formal and informal taxes. Formal taxes are those prescribed by legislation. Informal taxes are of two main types: (1) bribes paid to government officials; and (2) payments made for the support of public sector needs that are nominally voluntary but in fact mandatory for businesses, for example, payments made by enterprises to support the social sector of towns and regions, cultural programs, philanthropic giving, and so on.

So we have rent being divided into formal taxes, informal taxes, price subsidies, and excess costs of extraction. Finally, there are the net profits of company.

This makes five categories in all. We depict them graphically in figure 4:

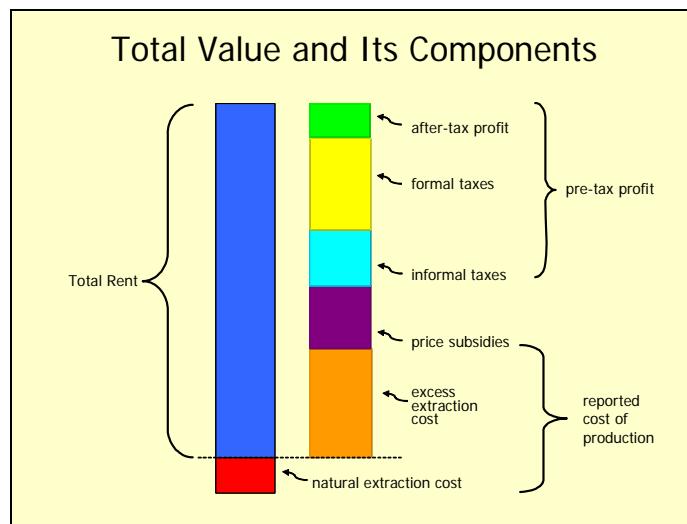


FIGURE 4

This chart is merely a stylized version of the decomposition of rent. The relative sizes of the five components are not intended to reflect precise measurements. It is more important to understand that each of the categories is significant. Each represents a share of the total rent, and each has a “constituency” — vested interests. So how the shares are allocated has important political consequences.

It is imperative to be aware of the informal categories of rent-sharing: informal taxes, price subsidies, and excess production costs. Like the part of the iceberg that lies beneath the surface, they may turn out to be most important in assessing current and future economic and political developments. To take one example, one frequently hears statements to the effect that a decline in oil prices would

have little impact on the Russian economy. The government's oil stabilization fund, it is said, absorbs the windfall. The core budget is sustainable at much lower oil prices. But this line of thinking is based on looking at formal taxes alone. In fact, we see that the formal taxes and the formal budget are only a part of the picture. Informal rent-sharing sustains a much broader part of the economy and society. Lower oil prices mean smaller overall rents, and thus less to be shared among all the categories — not just the part represented by formal taxes.

Another insight from the picture in figure 4 relates to the issue of "Dutch disease." In the classical form of this illness that affects resource-abundant economies, the resource sector squeezes out manufacturing. But when excess costs are an important form of rent sharing, as in Russia, manufacturing industries may benefit, rather than suffer, from the existence of a large resource sector.

A stark example of this in Russia is rail car manufacturing. Shipping oil by rail is several times more expensive than by pipeline. Those excess costs are a burden to the economy as a whole. However, they are advantageous to some interests. The big producer of railway tank cars is Uralvagonzavod in Nizhniy Tagil — the tank manufacturer. This company is booming as a result of the costly decision to ship oil by rail rather than pipeline. Railway tank car production is higher now than it ever was during the Soviet period.

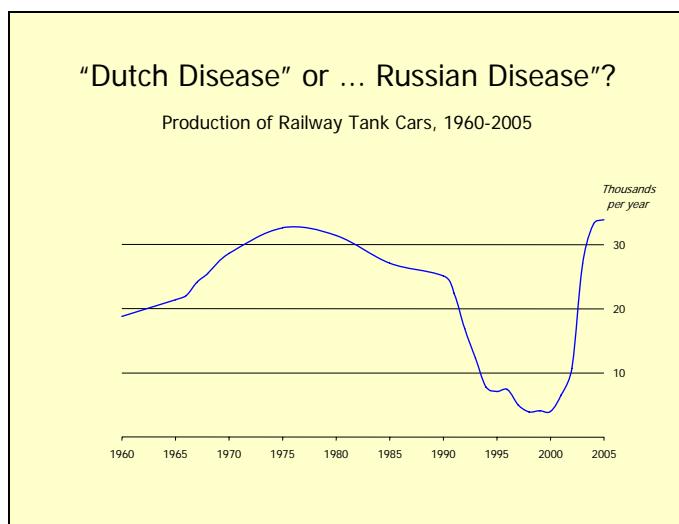


FIGURE 5

So, while "Dutch disease" may afflict some countries, the rent deployment system we are describing means that Russia has a different disease. As a result of the demand from the oil sector firms, those parts of manufacturing that are contributors to excess cost benefit when Russian oil production increases.

There are two important points to note with regard to the "Russian disease." First, although manufacturing as a whole may not be squeezed by real appreciation of the currency, those industries that are in the tradable goods sector will be. Thus, there is a compositional shift in manufacturing, away from tradables and towards those sectors that supply the oil sector. Second, the consequences for the economy of an increase in oil rents differ depending on whether the increase is due to a rise in price or to a rise in production. Excess costs are more sensitive to the latter than the former. If

production is stagnant while prices rise, the distribution of rent across components shifts away from what it is with production growing at constant prices.

### *Evolution of the Rent-Sharing System*

“Rent-deployment” has always been central to Russia’s political economy. In the Soviet era, it was easy: the companies were owned by the state, and the central planners allocated rent by the pricing system. It was direct, and pretty nontransparent.

In 1990s, the system was bottom up. The resource industries were in private hands. What emerged was the virtual economy. The virtual economy was about informal rent-sharing.

Why did the owners of the resource companies share their rents? It was because they had no secure de facto [economic] property rights to what they legally owned. They needed friends and allies. The rents they shared were a form of investing in relational capital. To avoid losing all their wealth, the owners of resource companies — the so-called oligarchs — shared some of their rent locally as a means of guaranteeing that they could keep the rest.

Putin inherited this system. To him it was unacceptable, for reasons separate from any adverse impact it may have had on aggregate economic performance. He did not like it because such a huge amount of wealth was controlled and produced in so few companies, with the rest of the economy dependent on them. He could not control, much less run, the country without being able to steer those flows to where he wanted — and, conversely, to prevent them from being used to establish a power independent of the center.

When Putin acceded to the presidency, the oligarchs were on the verge of buying the state. As he came in, they were busy buying it up in regional chunks. He undercut that in two ways. First, he removed the object of purchase (the governors). Second, he presented a credible threat to the oligarchs’ property rights (using Berezovsky/Gusinsky as examples).

Note that Putin did not attempt to, and did not desire to, eliminate informal rent-sharing. He only wanted to centralize it so he could control it. What Putin therefore has been doing is transforming, step-by-step, the previous schemes into a single, centrally run scheme, very much along the same lines — requiring constant investments by oligarchs to protect property rights. But it is centralized. A centralized protection racket.

In Putin’s mind, it is of course different. He sees this as combining the virtues of private ownership with what he views as “strategic direction” of the economy.

His scheme has, however, at least three problems. One is that it is exceedingly wasteful for the entire society: the excess costs, informal taxes. The second is the high tax burden. We have referred to the punitive formal tax rates on resource companies. Think now of what the real tax rate is when one includes informal taxes, price subsidies, and excess costs. The incentives for investing for the future become quite weak.

Third — and this is most subtle but perhaps most important — remember that the entire scheme requires the deliberate weakening of property rights. Owners with secure property rights have little

reason to invest in relational capital (that is, to share their rents). Credible threats of expropriation are required to induce such investments. But this poses a major dilemma.

Economists would argue that the most efficient way to develop the economy as a whole, and the energy sector in particular, is through private ownership with secure property rights. A private sector with insecure property rights biases decisions towards too much current production and too little investment in new deposits. Businesses' time horizons are shortened, and this threatens the future of the sector.

To make a long story short, the scheme — which starts with rent-distribution — ends by undermining rent-production. The focus on “divvying up the bounty” not only diverts from “creating the bounty” but negates it.

Putin is alarmed. Having written a dissertation on the topic, he is aware of the importance of “reproduction of the raw materials base.” His solution certainly appears to be even more centralization. In the short and medium term, things may look good — because of the prospect of high oil prices. But in the long term, the outlook is pessimistic if centralization is the policy. Such a strategy risks recreating the problems that led to stagnation of the sector in the mid-1980s, namely the risk of large investment errors.

### *The Investment Problem*

Getting things right in Russia’s resource sector is important not just because oil and gas are big, but also because the option of diversifying out of oil and gas faces a huge hurdle — the high cost of investment in Russia.

What do we mean? Many analysts have warned that Russia’s investment rate — that is, the share of GDP that goes to purchase of new plant and equipment and construction of new facilities — is disturbingly low in view of its growth and modernization tasks. The problem is actually even worse than most observers realize. Most discussion of the problem measures investment at domestic prices. But the relative price of investment — relative to other components of GDP — differs across countries. It is well-known that the relative price of investment decreases with per-capita income. Russia has a very high relative price of investment, partly a legacy of subsidized consumption, partly a result of the value deployment scheme we have discussed, and partly because of its climate (although most of this latter effect is not reflected in even the best of current estimates).

This is evident if we compare investment rates at both domestic and international prices, and add some fast growing economies for comparison. First we look at investment shares at domestic prices (figure 6).

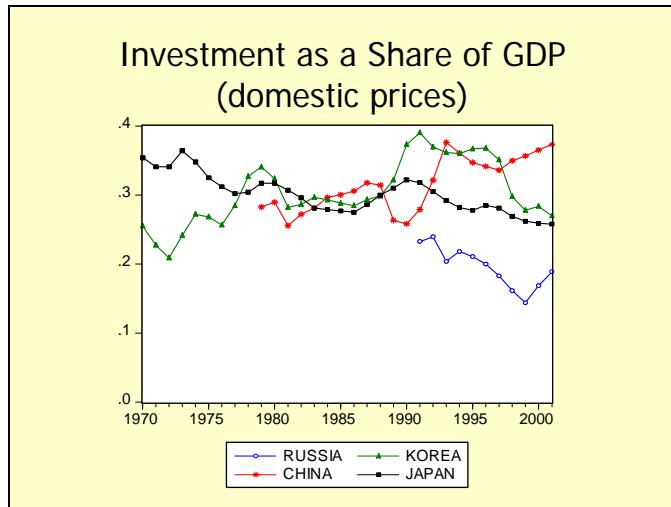


FIGURE 6

Now compare this to international prices. We can see that Russia's investment share falls in half. It is much more severely impacted than the other economies, save China.



FIGURE 7

Another way to think of this is as follows. The first figure (investment at domestic prices) is “what you spend,” while the second figure (at international prices) is “what you get.” It is “effort” versus “result”. For Russia, the “result” is only half as much as the “effort.”

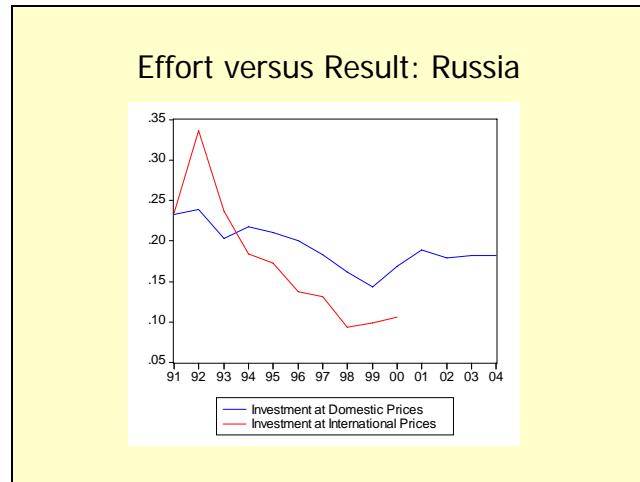


FIGURE 8

In one of their articles, Bradford DeLong and Larry Summers made an observation that applies precisely to Russia in this regard:

**JME, 1993**

"Many of the policies that have been followed in the post-WWII period, especially in the developing world, seem designed to maximize 'investment effort,' while ensuring that each unit of 'investment effort' translates into as little actual investment as possible."

FIGURE 9

Russia maintains its high growth rates because it is an oil and gas exporter. Diversifying out of oil means moving resources from high-return to low-return investments. There really is no simple alternative growth strategy for Russia.

For anyone who believes the contrary — that Russia is cursed by its oil, that it would be better off without oil, and that it should diversify out of oil as quickly as possible — we leave you with this sobering exercise.

### Implications of the High Relative Price of Investment

- Standard Growth Regression

$$y_t = \alpha + \beta_1 y_0 + \beta_2 n + \beta_3 \text{sec} + \beta_4 \text{inv}$$

- Counterfactual Forecast

- With no oil, it would take a 55% investment rate to double GDP in 10 years!
    - Of course the price is high because of oil
    - Diversify out of oil?

FIGURE 10

What this says is: Imagine a Russia without oil, but with the other basic prerequisites of growth — its stocks of physical and human capital. A standard growth exercise of the type illustrated in the equation in the figure suggests that Russia would require a 55% savings rate, to double GDP in ten years....

Is really wise to diversify out of oil and gas?

A properly organized energy sector, that is one driven from the bottom up rather than the top down, can power growth in Russia. In the United States, resource intensity increased historically as a response to market conditions, not prior resource abundance. Production of resources in the U.S. increased relative to initial resource stocks as a result of demand. And this created forward and backward linkages: forward to sectors such as petrochemicals that were based on resource production, and backward to such industries as petroleum engineering and oil services that fueled future growth. Russia could follow such a path. But to do so would require proper organization of the sector. This would mean a sector open to new entrants, both Russian and foreign. The old and new companies would be free to compete (and subject to the discipline of competition). They would be unburdened by the demands of onerous and opaque rent-sharing schemes. They would have secure property rights.