

Influence of the Oil Price Increase on the Russian Economy: Comparison with Saudi Arabia

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Introduction

The aim of this paper is to understand more clearly the impact of the oil price increase on the Russian economy, by comparing with the Saudi economy. In the next section, I will briefly look upon oil production and export trends in the two countries and in the following sections I will discuss:

- 1) Contribution of mining industry (oil and gas industries) on GDP growth in real terms;
- 2) Economic growth driven by household consumption;
- 3) State budget surplus.

Trends in Production and Exports of Oil in Two Countries

Since 1998, when the oil price was at the bottom, the increase in oil production in Saudi Arabia has not been impressive. In this period Russia almost caught up with Saudi Arabia in oil production. From 1998 to 2006, 43.3 percent of the increase in the world oil production was provided by Russia (IEA).² The contribution of Saudi Arabia was 16.2 percent.

The two countries largely differ in oil production performance, especially, in years of 2001-2002 and 2006 (Fig. 1). Saudi Arabia seemed to react intentionally to oil price fluctuations, as a so-called swing producer: the higher the price, the larger the production, and vice versa (Fig. 2). On the contrary, oil price fluctuations have not had a direct impact on oil production in Russia. Increase rates of oil production have decreased since 2005, but they have been still

¹ Uncompleted version without tables and figures, which will be shown at my presentation. Not for citation.

² This fact was revealed by Ahrend and Tompson (2006, p. 7) in the period from 1998 through 2004. According to oil statistics released by BP, Russia's contribution in the period 1998-2007 was 52.1 percent. Of course, we should take into account substantial decreases in oil production in Russia in the 1990s.

around 2 percent annually.

With respect to oil exports, 44.4 percent of the increase in world oil exports was accounted for by Russia in the period 1998-2005 (IEA). The contribution of Saudi Arabia was 9.7 percent. Increase rates in oil exports for Russia have been more salient than those for Saudi Arabia (Fig. 3). Saudi exports of oil decreased in 2001-2002 and increased largely only in 2003. As for Russia, growth rates of oil exports increased year by year in 2000-2003; but they decreased in 2004 and became negative in 2005.

The ratio of exports to production for Russia increased from about 45 percent in 1998-2000 to 54-56 percent in 2003-2005. In contrast, in Saudi Arabia, it decreased from 75-76 percent in 1997-1998 to 70-71 percent after 2000. It implies that Saudi Arabia has not considerably increased production, and, in addition, decreased the share of exports in production.

If we compare oil and gas exports valued in dollars, we see similar dynamics, though Saudi exports of oil and gas exceed considerably those of Russia (Fig. 4). Three fourth of Saudi exports are accounted for by crude oil. Petroleum products (HS2710) have the share of about 10 percent. Most of extracted natural gas is used domestically and exports of gas (HS2711) have been few. In Russia crude oil's share amounts to one third and the share of oil and gas, including natural gas and petroleum products, is approximately 60 percent.

Contribution of Oil and Gas Industries to GDP growth

While in Saudi Arabia there had been a certain degree of correlation between growth rates of GDP and oil production until 2005, in Russia such a correlation has not been observed (Fig. 5).³ This is due to a stronger contribution of mining sector or oil production to GDP growth in Saudi Arabia (Fig. 6).⁴ On the contrary, in Russia, if we calculate from official SNA statistics, the contribution of mining sector to GDP growth has been negligible.

In Saudi Arabia the share of mining sector was around 33-38 percent of GDP at basic prices in 2000-2003 and increased to 50.9 percent in 2007 (Table 1).⁵ Manufacturing has accounted for 9-10 percent of GDP and trade sector – 5-6 percent. In Russia, as was repeatedly argued by Masaaki Kuboniwa and the author, the size of mining sector or oil and gas sector has been substantially small, due to an artificially lowered producers' prices of oil and gas (Kuboniwa et al, 2005; Tabata, 2002). The share of mining sector was only 10.4 percent in 2007

³ Relations between growth in oil production and in mining sector###

⁴ Mining sector means “mining and quarrying” in industrial classification. Both countries seem to adopt basically the same industrial classification, i.e., international standard.

⁵ Actually, oil and gas sector accounted for 50.7 percent of GDP in 2007. It implies that the mining sector is almost equivalent to the oil and gas sector in Saudi Arabia.

in official statistics. The shares of manufacturing and trade sectors are 19.0 percent and 20.6 percent in 2007, respectively. However, if we add the value added produced in oil and gas sector, but recorded in the trade and transportation sectors or recorded as taxes on production, the share of mining sector jumped to 20.4 percent in 2007 (Table 1). It is interesting to note that Saudi Aramco, oil and gas monopoly in Saudi Arabia, did not seem to apply transfer prices in order to evade or reduce tax payments, while the Russian gas monopoly, Gazprom, did.⁶

As a result of these differences in the share of mining sector in GDP, the influence of mining sector on GDP growth greatly differs between Russia and Saudi Arabia (Fig. 6). In Saudi Arabia the contribution of mining sector amounted to 4.7 percent in 2003 and 1.8-1.9 percent in 2003-2005. The contribution by other sectors was 2-3 percent in 2000-2003 and 3-4 percent in 2004-2007. Of which, the contribution of manufacturing was only 0.4-0.5 percent in 2000-2002 and increased to 0.7-0.9 percent in 2003-2007. The contribution of finance, insurance, real estate and business services was 0.4-0.8 percent in 2000-2007 (Calculated from SAMA, 2007, Table 9-2).

In Russia the contribution of mining sector was 0.5-0.6 percent in 2001-2004, and 0.0-0.2 percent in the following years. The largest contribution was recorded in trade sector (1.7-2.7 percent in 2003-2007) and manufacturing (0.5-1.5 percent in the same period).⁷ If we use the revised share of mining sector which takes into account “real size” of oil and gas sector, the contribution of mining sector amounted to 1.5-1.7 percent in 2003-2004, but it was 0.1-0.3 percent in the following years, even though GDP growth rate was high in these years. The contribution of other sectors was 5.6-8.0 percent in 2003-2007, even if we use the revised share of mining sector.

You may ask why the impact of oil and gas sector on GDP dynamics so differed between Russia and Saudi Arabia, although both countries received approximately the same amount of oil and gas export revenues and the increase rates of mining sector or oil production of Russia exceeded those of Saudi Arabia in the 2000s. Was this due to statistical discrepancies of Russia? My tentative answer to this question is that in Saudi Arabia, growth of oil production straightly affects the growth of other industries, while in Russia this relation is not so straightforward, because the dominance of oil and gas industries over other industries is

⁶ Or we should say that in Saudi Arabia the taxation system on oil and gas has been so complete that there were no ways to escape it.

⁷ Calculated by the data by OKVED (All Russian classification of kinds of economic activities) classification derived from Rosstat’s website. See Tabata (2006a, p. 97) for the contribution to GDP growth by sector of origin, calculated from the data by OKONKh (All Russian classification of sectors of national economy) classification. Rosstat transferred from OKONKh, traditional Soviet or Russian classification, to OKVED, based on International statistical industrial classification (ISIC Rev. 3.1).

stronger in Saudi Arabia.

We could summarize that in Saudi Arabia high economic growth was observed only in the period from 2003-2005 due to the increase in oil production, promoted by the increase in oil prices in these years. In Russia, the high economic growth in the 2000s was not explained by the increase in production of oil and gas. It was rather accounted for by the increase in oil prices itself which accelerated the increase in household consumption, as will be discussed below.

We can see some correlation between oil price increase and GDP growth both for Russia and Saudi Arabia (Fig. 7). But this correlation has become weaker since 2004. As for Saudi Arabia, this correlation had been explained by its policy of oil production explained above, i.e., functioning as a swing producer, until 2003. Since 2004, because oil production has not increased in spite of oil price increases, the correlation has become ambiguous. With respect to Russia, it is very difficult to explain this correlation.

We have an impression that GDP indicators in real terms are unable to express real dynamics of the economy with growing oil and gas export revenues caused by price increases (Tabata, 2006a, p. 105). Kuboniwa (2007) and the author argued that real GDI (Gross Domestic Income) indicators might be more appropriate one that take into account the improvement in terms of trade. I calculated real GDI growth for Russia and Saudi Arabia (Fig. 7).⁸ It is obvious that GDI indicators more tightly corresponded with oil price increases for both countries and that the GDI growth rates have been higher than those of GDP since 2003. In addition, clearly, GDI growth rates of Saudi Arabia more neatly followed the oil price indicators than those calculated for Russia. I guess that this is explained by the greater dominance of oil in Saudi exports and by larger amounts of imports by Russia which might have included commodities with deteriorating terms of trade.

Economic Growth Driven by Household Consumption

It is obvious that Russian economic growth in the 2000s has been driven by increases in household consumption (Fig. 8). On the contrary, as for Saudi Arabia it is difficult to understand driving force of the economic growth in recent years in terms of final use (Fig. 9).⁹ If we compare the share of household in GDP in the two countries, for Russia it is almost 50 percent, while in Saudi Arabia it is less than 30 percent in 2004-2007 (Table 2). The share of

⁸ I used the domestic demand deflator. See Kuboniwa (2007, p. 4) for this account. As for the lack of the Saudi data before 1998 and after 2005, see next footnote.

⁹ GDP data by final use in real terms after 2005 are not available and these data until 1996 and in 1999 (available from UN, 2008a) are not usable, because they are deflated by a single deflator: there were no separate deflators for each item of final use. Actually, UN (2008a) provides the data for 2005 and 2006, but they are rough estimates by the UN staff.

gross capital formation is roughly the same level and as for the share of government consumption, Saudi Arabia exceeded Russia by 6 percent points in 2004-2007.

In Saudi Arabia, the share of domestic demands, including household consumption, shrank in 2004-2007 compared with the period 2000-2003, indicating the increase in share of net exports, which grew from 18.5 percent in 2000-2003 to 29.5 percent in 2004-2007. The shares of both exports and imports increased in these periods for Saudi Arabia. Although imports of Russia, valued in dollars, increased by 2.59 times between these two periods and those of Saudi Arabia – by 2.04 times, the share of imports in GDP for the latter country (30.9 percent) exceeded that of Russia (21.6 percent) in 2004-2007. With respect to exports, while exports of both countries, expressed in dollars, increased by almost the same rate in these periods (2.41 times for Russia and 2.42 times for Saudi Arabia), the share of exports in GDP for the latter exceeded 60 percent in 2004-2007, compared with 33.5 percent in the former.

This difference is mostly due to a sharp appreciation of the ruble and the stability of exchange rates of the riyal. The ruble was appreciated against dollar by 18.3 percent annually in the period 2000-2007. On the contrary, as the riyal has been pegged against the dollar and the inflation rate has been low in this period in Saudi Arabia (6.0 percent in these 8 years),¹⁰ the riyal was appreciated only by 6.0 percent in this period. Due to this big difference in dynamics of exchange rate of national currencies, exports and imports, valued in national currencies, has been expanded compared with domestic demands in Saudi Arabia, while this is not the case for Russia. The difference in exchange rate policies will be discussed below.

The sharp appreciation of the ruble in real terms has caused the satisfaction of a large part of growing demands of households by imports in Russia. This is completely not true for Saudi Arabia. Since the riyal has been pegged against the dollar, the riyal has been depreciated against other currencies in tandem with the dollar. According to the indicator of nominal effective exchange rates of the riyal calculated by the IMF (reported in *International Financial Statistics*), it has been depreciated every year since 2002 and the depreciation has been larger in terms of real effective exchange rates, calculated also by the IMF.

In Russia, because imports increased considerably in real terms, the contribution of net exports to GDP was negative in the period 2000-2007, except for 2002 and 2003. Imports in SNA statistics grew by 21.4 percent annually in real terms and their contribution to GDP amounted to minus 4-6 percent annually in this period. As for Saudi Arabia, imports in SNA statistics increased only by 8.9 percent annually in real terms in the period 2000-2004. The causality that the growth of household consumption brought about increases in imports was not observed in Saudi Arabia in such a scale as in Russia. This might be related to a smaller size of

¹⁰ Calculated by the data of *IFS*.

Saudi consumer markets with a smaller population of 24 million people, i.e., one sixth of Russia. On the contrary, we could say that tremendous increases in imports, or the possibility of massive and cheap imports, caused the increases in household consumption in Russia.

State Budget Surplus

Needless to say, both countries benefited largely from increasing oil and gas export revenues. Fig. 10 illustrates the situation for Russia. In this figure, oil and gas revenues of the state budget include excises, severance taxes and export duties on crude oil, petroleum products and natural gas, and revenues of joint venture “V’yetsovpetro.”¹¹ In 2007, the state budget absorbed 55.3 percent of oil and gas export revenues.¹² In 2004, the Stabilization Fund of the Russian Federation was established, in which excess revenues of export duties and mineral extraction (severance) taxes on oil were accumulated.¹³ We can see from this figure that oil and gas revenues of the state budget has been increasing especially since 2004, in tandem with increases in oil and gas exports, causing the expansion in state budget surplus. It is also clear that a considerable part of the state budget surplus was accumulated in the Stabilization Fund.

Fig. 11 shows the corresponding situation for Saudi Arabia. In this country, 79.6 percent of oil export revenues were received by the state budget on the average in 2000-2006.¹⁴ Oil revenues accounted for 83.4 percent of the state budget revenues on the average in this period. This implies the larger dependence of the state budget on oil in Saudi Arabia than in Russia.

The accumulation of oil revenues in Saudi Arabia is very unique or mysterious. The central bank of Saudi Arabia, called “Saudi Arabian Monetary Agency (SAMA),” is responsible for this.¹⁵ The Saudi system reminded us, students of the Soviet economy, “state monopoly of foreign trade” or “special foreign trade earnings” in the Soviet era.¹⁶ A considerable part of oil export revenues seem to be transferred to the state budget as oil revenues in dollars.¹⁷ And if some of them are not used, in other words, if there are some state budget surpluses, then, they

¹¹ Profit taxes and value-added taxes from the oil and gas sector are not taken into consideration.

¹² These state budget revenues were levied not only from exports of oil and gas.

¹³ This fund was transformed into two funds in the beginning of 2008. See, Tabata (2007).

¹⁴ Oil and gas exports are almost equivalent to oil exports in Saudi Arabia, as was explained above.

¹⁵ The SAMA is not a sovereign wealth fund.

¹⁶ As for special foreign trade earnings, see Treml and Kostinsky, 1982.

¹⁷ Oil revenues include oil production revenue and oil income taxes. Tax rate of corporate income tax for entities engaged in oil and other hydrocarbon production was reported to be 85 percent (###). It is 86 percent according to Hosoi (2002, p. 240).

are accumulated as foreign assets of SAMA. Fig. 11 supports this hypothesis: the amount of state budget surplus well corresponded to the increase in net foreign assets of SAMA.

Interestingly, the volume of state budget surpluses in the two countries has been approximately the same level since 2004 (Fig. 12). Although the accumulation of these surpluses has been larger in Saudi Arabia than in Russia, its trends are basically the same in the two countries.

Contrary to these similarities, there are big differences in their implications for money supply, caused by the difference in systems and policies of controlling foreign reserves and exchange rates. Curiously enough, foreign assets of the SAMA, the central bank of Saudi Arabia, are not considered as foreign reserves of Saudi Arabia. Fig. 13 shows that while in Russia foreign reserves have increased tremendously since 2003, in Saudi Arabia such increases were not observed at all. However, if we add net foreign assets of SAMA to official foreign reserves,¹⁸ we see similar developments of “actual” foreign reserves in the two countries.

Balance of payments statistics of Saudi Arabia (SAMA, 2008, Table 8-2) show the actual foreign reserves as “official capital and reserves,” which did not correspond to the dynamics of official foreign reserves of the country, but did correspond to the dynamics of net foreign assets of the SAMA.¹⁹ If we adopt this definition of actual foreign reserves of Saudi Arabia, the dynamics of balance of payments statistics of both countries become quite similar (Fig. 14 and 15). Both of them shows increasing trade surpluses, negative “other current balances” (mostly, service balances) and growing reserves. The largest difference was observed in 2007, when Russia recorded a huge amount of net private capital inflow owing to a significant increase in loans borrowed by banks and firms from abroad and in foreign direct investments from abroad (Hanson, 2007, pp. 884-885).

The SAMA explains on this account:

Although in Saudi Arabia, the receipt of oil revenues by government directly produces a rise in government deposits, it has no immediate impact on domestic liquidity since by definition domestic liquidity is held only by the private sector. Only when the government injects this revenue into domestic income stream, through its domestic expenditure, the inflow of foreign exchange is translated into domestic liquidity (SAMA, 2007, p. 48).

¹⁸ Volumes of net foreign assets of the SAMA are reported in the statistics of monetary assets (SAMA, 2008, Table 1-8a). They are “foreign currencies and gold” plus “deposits with banks abroad” plus “investment in foreign securities” minus “foreign institutions’ deposits in local currencies,” all of which are reported in “Balance sheet of SAMA” included in *Quarterly Statistical Bulletin of SAMA*.

¹⁹ Balance of payments statistics reported in *International Financial Statistics* largely differ from those compiled by SAMA (2008).###

This is why Saudi Arabia has been able to keep a fixed exchange rate system, in spite of growing oil export revenues. They are put aside in the SAMA and have not influenced exchange markets at all. In turn, they have not influenced money supply at all. While in Russia the average of annual increase in money supply (M2) in 2000-2007 amounted to 44.4 percent, in Saudi Arabia it was only 12.3 percent.²⁰

As was pointed out in Tabata (2007, pp. 702-703), the Stabilization Fund of Russia has been employed in an effort to sterilize the money supply. Fig. 16 illustrates the sterilization by the Stabilization Fund. A considerable part of the increase in foreign assets of the CBR has been absorbed by this fund and the increase in monetary base must have been substantially reduced owing to the increase in this fund.²¹ Fig. 17 shows the corresponding situation in Saudi Arabia. It is obvious that deposits of the Government absorbed a considerable part of the increase in foreign assets of the SAMA, as is the case in Russia. In Saudi Arabia, however, increases in monetary base have been extremely small and the contribution of “other” has been large, which includes, among others, “other miscellaneous liabilities,” i.e., an unidentified item. From these poor statistics, it is impossible to understand how the increase in money supply has been curbed in Saudi Arabia.

Fig. 18 compares inflation rates of the two countries. Clearly, Saudi Arabia succeeded to keep inflation rates low, at least until 2005. Needless to say, the difference in inflation rates is mainly due to the difference in increases in money supply.²²

Concluding Remarks

The major findings of this paper are summarized as follows:

1) The impact of oil price increases on GDP growth has not been straightforward in Russia. The growth of the mining sector has less direct impacts on GDP growth in Russia compared with Saudi Arabia. Improvement in terms of trade seemed to influence all sectors of the Russian economy.

2) It is far more evident in Russia in comparison with Saudi Arabia that economic growth has been driven by increasing household consumption. It is also one of the

²⁰ Calculated from the data of CBR website and SAMA (2008, Table 1-2).

²¹ Fig. 16 is compiled from accounts of the CBR in monetary survey statistics, by using the equation that foreign assets are equal to monetary base plus foreign liabilities plus deposits of the Government plus other net liabilities minus credits to the Government, banks and other institutions. I owe this idea to Yugo Konno (2008, p. 7).

²² The contribution of foods has been large in recent years for Saudi Arabia (IMF, 2008, p. 14). If we adopt weights used in the calculation of CPI, which were reported in SAMA (2007, p. 104), the contributions of foods and “renovation, rent, fuel and water” were 47.1 percent and 37.6 percent, respectively, in 2007.

characteristics of the Russian economic boom that the increase in personal consumption has been accelerated by the increase in imports, which, in turn, promoted by the significant appreciation of the ruble. These characteristics were not observed in Saudi Arabia.

3) Volumes of the increase and accumulation of state budget revenues coming from growing oil and gas exports were approximately the same in both countries. But because exchange rate policies and exchange markets have been more liberal and open in Russia than in Saudi Arabia, the impact of the oil price increase on the monetary aspect of the economy has been more straightforward in Russia, resulting in tremendous increases in foreign reserves and money supply and in higher inflation.

If we keep in mind the Soviet system of transferring oil exports revenues into the state coffers or the existing Saudi system with a similar function, it seems appropriate and a matter of course that the Putin administration established the system of heavy taxation on oil and the Stabilization Fund, in order to absorb these windfall gains in the state budget (Tabata, 2002; 2006b). The functioning of the strange and nontransparent system of Saudi Arabia seems to suggest that it is extremely difficult to fight against simultaneously the inflation and the appreciation of the ruble in circumstance of continuing oil price increases in such a liberal and open system as in Russia.

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