
The Influence of High Oil Prices on the Russian Economy: A Comparison with Saudi Arabia

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Abstract: A senior Japanese specialist on Russia's economy and its oil and natural gas sectors compares the influence of high oil prices on that economy as well as on Saudi Arabia's. The author provides a penetrating analysis of the relation between oil price increases and GDP growth, of the growth of GDP by final use, and of the accumulation of state budget surpluses in the world's two leading producers and exporters. Although brief references are made to the drastic decline in the price of oil prompted by the global economic crisis that emerged in the fall of 2008, the paper is specifically focused on the impact of price increases that peaked in July. *Journal of Economic Literature*, Classification Numbers: E660, H200, H600, O110, Q400. 9 figures, 6 tables, 35 references. Key words: Russia; Saudi Arabia, GDP growth, GDP by final use, state budget surplus, accumulation of budget surpluses, oil exports, gas exports, money supply, currency exchange markets, inflation, sovereign wealth fund.

INTRODUCTION

The purpose of this paper is to enhance our understanding of the impact of oil price increases on the Russian economy, by comparing it with that of Saudi Arabia. The two countries are the world's largest producers and exporters of oil and natural gas and must have received the largest amount of windfall profits from the recent oil price increases, which peaked in July 2008. It should be noted here that no effort will be made to analyze the effect of the slide of the world oil price from a peak of \$147 per barrel of crude to less than \$50 at the time of this writing, reflecting the onset of the global economic crisis. Suffice it to say that no less than another paper of similar length would be required to address the current recession and ensuing oil price decline. Moreover, the impact of oil price increases could well reappear after global demand begins to rise in the aftermath of the current crisis. It should also be emphasized that comparison of the two countries in this paper is preliminary, because the reliability of Saudi statistics, including GDP data in real terms and those detailing the budget, seems to be very low, even when compared with Russian statistics.

In the section that follows, I will briefly examine oil production and export trends in the two countries. Then, in the succeeding sections, I discuss: (1) the relation between oil price increases and GDP growth, (2) GDP growth by final use, and (3) the state budget surplus.

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Table 1. Crude Oil Production and Exports of Russia and Saudi Arabia^a

Year	Production				Exports				Exports/ production	
	Russia		Saudi Arabia		Russia		Saudi Arabia		Russia	Saudi Arabia
	Mill. tons	Pct. of increase	Mill. tons	Pct. of increase	Mill. tons	Pct. of increase	Mill. tons	Pct. of increase	Ratio (pct.)	Ratio (pct.)
1998	301.4	-0.8	441.3	1.9	137.2	8.2	339.1	4.2	45.5	76.8
1999	303.2	0.6	414.8	-6.0	134.5	-2.0	301.4	-11.1	44.4	72.7
2000	321.7	6.1	444.6	7.2	144.4	7.3	311.7	3.4	44.9	70.1
2001	345.8	7.5	432.1	-2.8	162.1	12.3	300.8	-3.5	46.9	69.6
2002	377.2	9.1	418.9	-3.1	188.4	16.2	293.3	-2.5	49.9	70.0
2003	418.6	11.0	477.8	14.1	227.9	21.0	342.9	16.9	54.4	71.8
2004	456.3	9.0	491.7	2.9	257.6	13.1	347.2	1.3	56.5	70.6
2005	466.4	2.2	514.6	4.7	252.6	-2.0	364.3	4.9	54.2	70.8
2006	475.8	2.0	506.3	-1.6	248.4	-1.6	358.4	-1.6	52.2	70.8
2007	487.2	2.4	483.1	-4.6	—	—	—	—	—	—

^aIncludes natural gas liquids (NGL).

TRENDS IN PRODUCTION AND EXPORTS OF OIL IN BOTH COUNTRIES

Since 1998, when the oil price was at its lowest levels, the increase in oil production in Saudi Arabia has not been impressive (see Table 1, based on IEA data for various years). Within the ensuing decade, Russia's output of crude caught up with Saudi Arabia's,² so that from 1998 to 2007, 41.2 percent of the increase in the world's oil production was provided by Russia.³ The contribution of Saudi Arabia in comparison was a mere 9.3 percent.

The two countries clearly differ in oil production performance, especially in the years from 2001 to 2002 and 2006 to 2007. Saudi Arabia seemed to react intentionally to oil price fluctuations, as a so-called swing producer: i.e., the higher the price, the greater the production, and vice versa (Fig. 1).⁴ On the other hand, oil price fluctuations have not had a direct impact on oil production in Russia. Increases in the rates of oil production have decreased since 2005, but still remained been around 2 percent annually.⁵ We should take into account here that while Russia is a price follower, Saudi Arabia usually influences international prices by dominating OPEC.

²Although Russia's production exceeded Saudi Arabia's in 2007, as shown in Table 1, it was likely due to the inclusion of natural gas liquids (NGL) in IEA statistics.

³This fact was stressed by Sagers (2006, p. 505) and Ahrend and Thompson (2006, p. 7). We should, of course, take into account the substantial decreases in Russia's oil production during the 1990s.

⁴There are arguments to the effect that Saudi Arabia has not been able to play the role of swing producer in recent years, because hikes in oil prices are caused not only by demand and supply balances, but also by monetary and financial factors.

⁵Masumi Motomura (2005, p. 86) has argued that Russia is not able to play the role of swing producer, because it is difficult to intentionally decrease production due to the role of geological conditions in oil extraction.

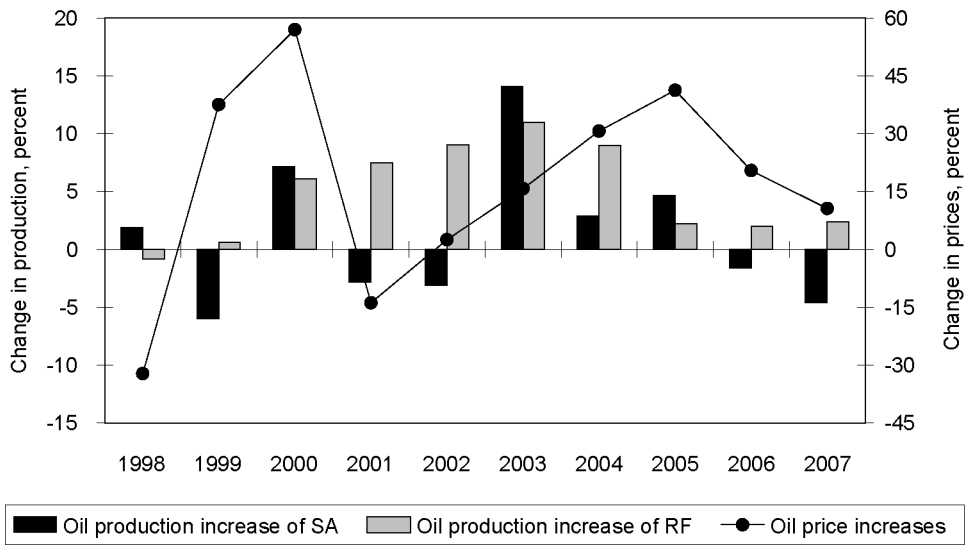


Fig. 1. Production and price increases of oil in Saudi Arabia (SA) and the Russian Federation (RF), 1998–2007, in percent of the previous year. *Sources:* Compiled by the author from Table 1 and *IFS* (n.d.).

With regard to oil exports, 39.1 percent of the increase in the entire world during the period from 1998 to 2006 was accounted for by Russia. The contribution of Saudi Arabia again was about one-sixth of this (6.8 percent). The rates of increase in Russia's oil exports have been more conspicuous than those of Saudi Arabia (Table 1). The Saudi exports of oil decreased in 2001–2002 and increased substantially only in 2003. As for Russia, the growth rates increased year by year from 2000 to 2003, but decreased in 2004 and became negative after 2005. The change in trend in 2004 presumably was due to export duty policies, discussed below.

The ratio of exports to production for Russia increased from about 45 percent in 1998–2000 to 52–57 percent in 2003–2006. In contrast, in Saudi Arabia, it decreased from 76.8 percent in 1998 to around 70–71 percent after 2000. This implies that Saudi Arabia has not meaningfully increased its production and, in addition, decreased the share of exports in its production. In fact, the output of Saudi petroleum products increased from 584.1 million barrels in 1998 to 651.3 million on average during the period from 2000 to 2006 (an increase of 11.5 percent).⁶ But on average Saudi Arabia decreased its exports from 499.7 million barrels in 1998 to 439.6 million barrels in 2000–2006 (a decrease of 12.0 percent),⁷ indicating a rise in domestic consumption (calculated from SAMA, 2008, pp. 362–363). In Russia, the production and export of petroleum products increased more rapidly: primary refining of oil rose from 169 million tons in 1999 to 229 million in 2007 (an increase of 35.5 percent), while exports of petroleum products almost doubled from 56.9 million tons to 110.7 million during the same period (*Rossiyskiy*, 2003, pp. 360, 642, 645; *Rossiia*, 2008, pp. 219, 486–487). This was probably due to the increase in export tariffs on crude oil as well as abolition of the

⁶These figures include liquefied petroleum gas (LPG).

⁷These figures include LPG and natural gas.

Table 2. Oil and Gas Exports in Russia and Saudi Arabia, 2000–2007, bill. dollars

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008
Russia									
Total exports	105.0	101.9	107.3	135.9	183.2	243.8	303.6	354.4	471.8
Oil and gas ^a	52.8	52.1	56.3	73.7	100.2	148.9	190.8	218.6	309.3
Oil	25.3	25.0	29.1	39.7	59.0	83.4	102.3	121.5	160.5
Saudi Arabia									
Total exports	77.3	67.8	72.3	93.0	125.7	180.1	210.5	233.4	–
Oil and gas ^a	70.7	59.6	63.6	82.0	110.4	161.1	187.7	205.5	–
Oil	62.0	50.9	55.1	70.6	92.9	137.2	162.2	180.0	–

^aIncludes petroleum products.

Sources: Compiled by the author from SAMA, 2008; UNSD, 2008b; and CBR, 2009.

scheme of export tariffs on petroleum products in 2004, whereby export tariffs on products were set precisely at 90 percent of those on crude oil (Tabata, 2006b, p. 49).

When we compare oil and natural gas exports valued in dollars, similar dynamics become readily apparent (Table 2). Although Saudi exports of oil have considerably exceeded those of Russia, the export values are more or less similar, if we add natural gas and petroleum products. Three quarters of the Saudi exports are accounted by crude oil, whereas petroleum products (HS2710) have a share of about 10 percent.⁸ Most of the natural gas extracted in the country is used domestically, as exports of gas (HS2711) have not been significant. In Russia, the share of crude oil amounts to one-third of total exports, and the share of oil and gas, including natural gas and petroleum products, is slightly above 60 percent.

RELATION BETWEEN OIL PRICE INCREASES AND GDP GROWTH

As I have argued in the not too distant past, Tabata (2006a), the impact of oil price increases on GDP growth has been ambiguous in Russia in recent years (Fig. 2). In contrast, the relation between the oil price increase and GDP growth has been more visible in Saudi Arabia.

With respect to Saudi Arabia, this correlation can be explained as follows. First, there is a correlation between the oil price increase and production, as explained above, i.e., the country functioning as the swing producer. This is not true in the case of Russia. Second, there has been a certain degree of correlation between the Saudi growth rates of overall GDP and the country's "mining" sector (Fig. 3, based on Table 3),⁹ due to the strong contribution of that sector to the growth of Saudi Arabia's GDP.

⁸"HS" followed by a series of numbers denotes a code number in the harmonized system classification for internationally traded goods.

⁹The term "mining sector" denotes the category "mining and quarrying" in the industrial classification, and represents all forms of mining and primary mineral extraction (including oil and natural gas). As both countries have adopted basically the same industrial classification (i.e., the International Statistical Industrial Classification, or ISIC), comparisons using this category are well grounded and informative. The correlation between the growth of oil production and that of the mining sector more broadly has been stronger in Saudi Arabia than in Russia due to the more pronounced dominance of the oil sector in Saudi Arabia's mineral industries.

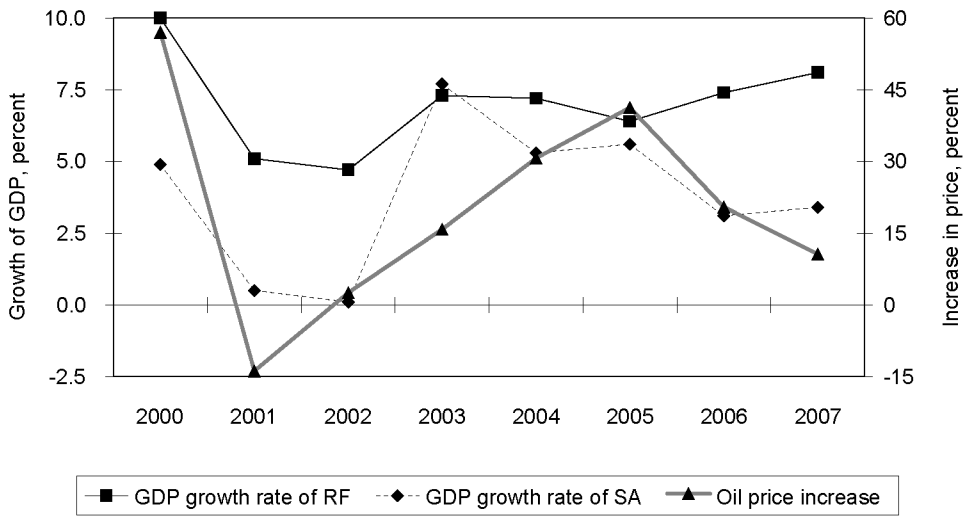


Fig. 2. Growth rates of GDP of Russia (RF) and Saudi Arabia (SA) and oil price increases, 2000–2007, in percent of the previous year. *Sources:* Compiled by the author from Table 3 and *IFS* (n.d.).

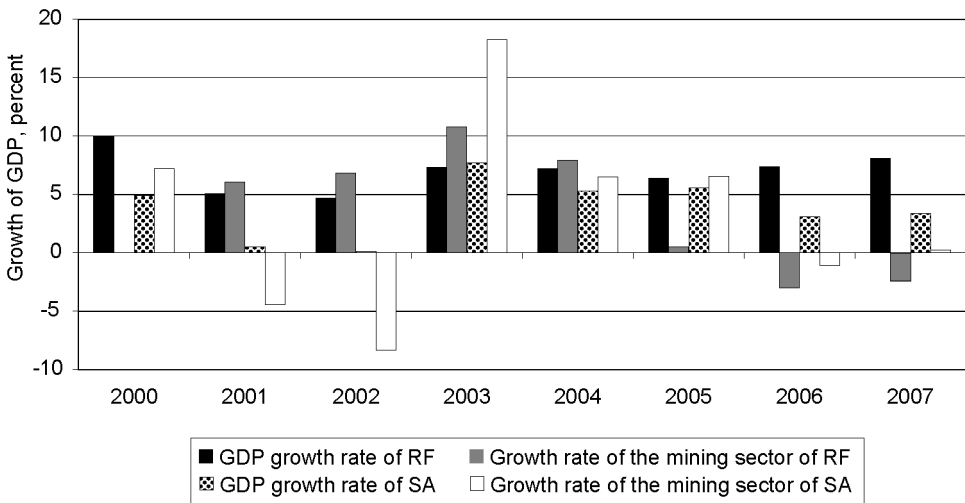


Fig. 3. Growth rates of GDP and the mining sector of Russia (RF) and Saudi Arabia (SA), 2000–2007, in percent of the previous year. Growth rate of the mining sector of RF for 2000 is not available.

In the latter country, the share of its mining sector was around 33–38 percent of GDP at basic prices in 2000–2003 and increased to 50.9 percent in 2007 (Table 3).¹⁰ Manufacturing has accounted for 9 to 10 percent and the trade sector, for no more than 5 to 6 percent.

In Russia, as repeatedly argued by Masaaki Kuboniwa and the author of this paper, the size of the mining sector (and of the oil and gas sector more specifically) has been substantially underestimated, due to artificially lowered producers' prices of oil and gas (Tabata,

¹⁰In fact, the Saudi oil and gas sector accounted for 50.7 percent of the country's GDP in 2007, implying that it is almost equivalent to the mining sector.

Table 3. Growth Rates and Contribution of Mining Sector to the GDP Growth of Russia and Saudi Arabia, 2000–2008, in percent

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008
Russia									
Growth rate of GDP	10.0	5.1	4.7	7.3	7.2	6.4	7.7	8.1	5.6
Growth rate of the mining sector ^a		6.1	6.9	10.8	7.9	0.5	-3.3	-2.6	0.2
Growth rate of oil production ^b	6.0	7.6	9.0	11.0	9.0	2.4	2.2	2.2	-0.7
Growth rate of natural gas production ^c	-1.4	-0.5	2.4	4.2	2.1	1.3	2.3	-0.8	1.6
Share of the mining sector in GDP ^d	9.1	8.0	6.8	6.7	9.6	11.2	11.0	10.1	9.5
Revised share ^e	19.0	15.4	13.6	13.6	17.3	19.0	18.7	17.9	17.2
Contribution of the mining sector to GDP growth		0.5	0.5	0.6	0.5	0.0	-0.3	-0.2	0.0
Revised contribution		1.0	0.9	1.3	0.9	0.1	-0.5	-0.4	0.0
Saudi Arabia									
Growth rate of GDP ^f	4.9	0.5	0.1	7.7	5.3	5.6	3.1	3.4	
Growth rate of the mining sector	7.2	-4.4	-8.4	18.3	6.5	6.6	-1.1	0.2	
Growth rate of oil production	7.3	-2.8	-10.1	18.6	6.1	4.8	-1.6	-4.3	
Share of the mining sector in GDP	37.6	33.9	33.9	36.9	41.3	48.7	50.5	50.9	
Contribution of the mining sector to GDP growth	2.1	-1.3	-2.4	4.7	1.8	1.9	-0.3	0.1	

^aData for 2001–2002 represent growth rates of total output of the mining sector, because rates of GDP growth of the mining sector are not available.

^bIncludes gas condensate.

^cIncludes petroleum gas.

^dAuthor's estimates (see Tabata, 2008) for 2000–2001.

^eThe “real size” of the oil and gas sector, as estimated by Kuboniwa, Tabata, and Rosstat (see Kuboniwa, 2008, pp. 114–115). For 2004–2008, the “real size” represents a rough estimate from the data of 2000–2003.

^fDerived from SAMA (2008, p. 354), except for 2001 data, calculated from SAMA (2008, p. 345).

Sources: Compiled by the author from *Rossiyskiy*, various years; SAMA, 2008, pp. 341, 345, 354, and 360; and Rosstat, 2009.

2002; Kuboniwa et al., 2005). The share of the mining sector was only 10.1 percent of GDP in 2007 in the official statistics, compared to shares of 18.5 and 20.5 for the manufacturing and trade sectors, respectively. However, if we add the value added produced in the oil and gas sector (but recorded in the trade and transportation sectors or recorded as taxes on production), the share of the mining sector jumps to 17.9 percent in 2007 (Table 3). Producers' prices are lowered because oil and gas companies transferred profits from their extraction firms to wholesale and transportation firms within vertically integrated holding companies in order to evade or reduce tax payments. In contrast, Saudi Aramco, the state-owned oil and gas monopoly,¹¹ did not seem to apply transfer prices. Quite likely, the taxation system in Saudi Arabia pertaining to oil and gas is sufficiently “tamper proof” that there are no ways of evading it.

¹¹Saudi Aramco accounted for 98.4 percent of Saudi Arabia's proven crude oil reserves in 2007 (SAMA, 2008, p. 359).

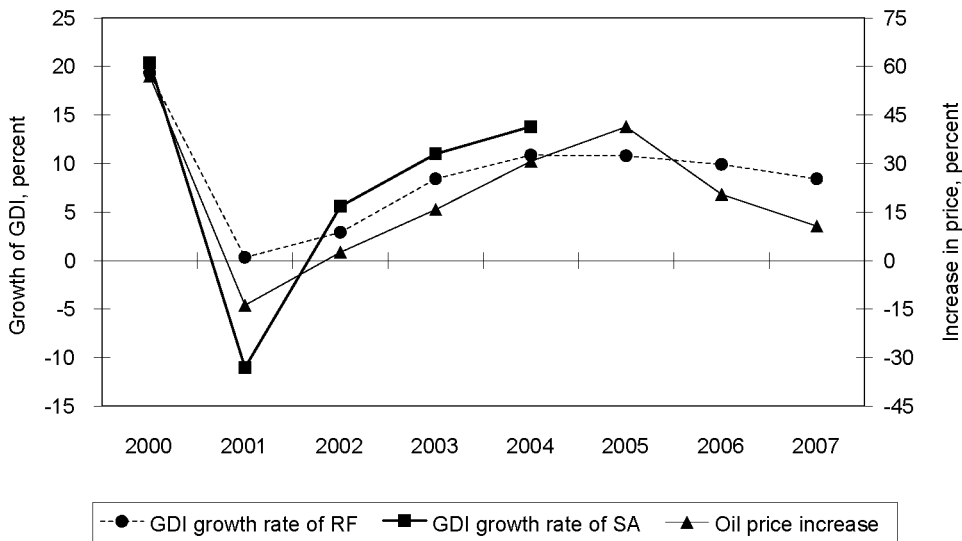


Fig. 4. GDI growth rates and oil price increases in Russia (RF) and Saudi Arabia (SA), 2000–2007, in percent of the previous year. *Sources:* Calculated by the author from CDSI (2008), Rosstat (2009), and *IFS* (n.d.).

As a result of these differences in the share of the mining sector in GDP, the influence of the mining sector on GDP growth in Russia and Saudi Arabia differs greatly as well (Fig. 3). In Saudi Arabia, the mining sector alone accounted for 4.7 percentage points of the overall GDP growth of 7.7 percent in 2003, and 1.8 to 1.9 percentage points (of overall GDP growth of 5.3–5.6 percent) in 2004–2005. The contribution of other sectors amounted to 2–3 percentage points in 2000–2003 and 3 to 4 in 2004–2007, with manufacturing contributing only 0.4–0.5 percentage points in 2000–2002 and 0.7–0.9 in 2003–2007; the contribution of finance, insurance, real estate, and business services was no higher than 0.4–0.8 points in 2000–2007 (calculated from SAMA, 2008, p. 345).

On the other hand, if we base our calculations for Russia on official SNA statistics, the contribution of the country's mining sector to GDP growth has been negligible, amounting to a paltry 0.5–0.6 percentage points (of overall GDP growth in the 4–7 percent range) in 2001–2004, and -0.3 to 0.0 points in the following years. The largest contribution was recorded in the trade sector (1.7–2.7 percentage points in 2003–2007) and manufacturing (0.9–1.5 points in the same period).¹² When we used the revised share of the mining sector that took into account the “real size” of the oil and gas sector, the contribution of “mining” amounted to 0.9–1.3 percentage points in 2001–2004, declining to -0.5 to 0.1 in the following years, even though the GDP growth rate was high (in the 6–8 percent range) in those years; the contribution of other sectors was 6.0–8.5 percentage points in 2003–2007, even when using the revised share of the mining sector.

¹²Calculated on the basis of the OKVED (All-Russian Classification of Economic Activities) classification derived from Rosstat (2009); see Tabata (2006a, p. 97) for the contribution to GDP growth by sector of origin, calculated on the basis of the OKONKh (All-Russian Classification of Sectors of the National Economy) classification. Since 2003, Rosstat transferred from OKONKh, the traditional Soviet or Russian classification, to OKVED, which is based on the International Standard Industrial Classification (ISIC Rev. 3.1).

Table 4. Contribution to GDP Growth by Final Use in Russia and Saudi Arabia, 2000–2008, in percent of previous year

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008
Russia									
Household and NPO ^a consumption	3.5	4.3	4.0	3.8	5.8	5.7	5.5	6.6	5.6
Government consumption	0.4	-0.1	0.4	0.4	0.4	0.2	0.4	0.6	0.4
Gross capital formation	2.6	1.7	0.5	2.3	2.3	1.9	3.2	3.9	2.2
Changes in inventories	5.6	1.4	-1.0	0.4	0.2	0.0	0.5	0.6	1.1
Net exports	-2.6	-2.6	0.5	0.3	-1.4	-1.5	-2.1	-3.4	-3.8
Saudi Arabia									
Household and NPO ^a consumption	2.0	0.3	0.8	1.3	3.1				
Government consumption	5.3	0.1	0.2	0.1	1.3				
Gross capital formation	0.9	0.3	0.3	3.0	0.8				
Changes in inventories	-0.1	-1.1	1.5	-0.2	0.5				
Net exports	-3.3	0.9	-2.7	3.4	-0.4				

^aNPO = non-profit organization serving households.

Sources: Calculated by the author from CDSI, 2008 and Rosstat, 2009.

It should be noted that GDP indicators in real terms are unable to grasp the real dynamics of the economy when growing oil and gas export revenues are caused primarily by price increases, because such price increases are deflated. Kuboniwa (2007) and Tabata (2006a, p. 105) argued that real GDI (gross domestic income) indicators might be more appropriate, because they take into account improvements in the terms of trade or increases in trade gains (see also OECD, 2006, pp. 22–24). Consequently, I calculated real GDI growth rates for Russia and Saudi Arabia as shown in Figure 4.¹³ Rather obviously, GDI indicators corresponded more closely with oil price increases for both countries and the growth rates of GDI have been higher than those of GDP since 2003. Although it is beyond the scope of this paper to discuss how trade gains should be distributed to each sector of the economy, it seems that the increase in trade gains in Russia has influenced all sectors of the country's economy through expansion of domestic demand.

GDP GROWTH BY FINAL USE

If we analyze GDP growth by final use, it is apparent that Russian economic growth in the 2000s has been driven by increases in household consumption. It is difficult, however, to understand in this context the driving force of the Saudi economic growth (Table 4).¹⁴

¹³I used the domestic demand deflator (see Kuboniwa, 2007, p. 4) in the calculations. The lack of complete data for Saudi Arabia is explained in footnote 14 below.

¹⁴This might be due in part to the deficiency of GDP data by final use in real terms for Saudi Arabia. Moreover, such data are not available after 2005 and those for the years prior to 1996 and for 1999 (available from UNSD, 2008a) are deflated by a single deflator and thus not suitable for use. In fact, UNSD (2008a) provides data for 2005 and 2006, but they are in fact only rough estimates by UN staff.

Table 5. Structure of GDP by Final Use in Russia and Saudi Arabia, 2000-2007, in percent of GDP

Indicator	2000–2003	2004–2007	2000–2007
Russia			
Households and NPO ^a consumption	49.3	49.3	49.3
Government consumption	16.7	16.9	16.8
Gross capital formation	18.0	18.9	18.5
Changes in inventories	2.4	2.7	2.5
Net exports	13.7	11.8	12.8
Exports	37.8	33.4	35.6
Imports	-24.1	-21.6	-22.9
GDP total	100.0	100.0	100.0
Saudi Arabia			
Households and NPO ^a consumption	36.2	27.9	32.1
Government consumption	26.1	22.9	24.5
Gross capital formation	18.1	17.7	17.9
Changes in inventories	1.2	2.0	1.6
Net exports	18.5	29.5	24.0
Exports	42.7	60.4	51.5
Imports	-24.2	-30.9	-27.6
GDP total	100.0	100.0	100.0

^aNPO = non-profit organization serving households.

Sources: Compiled by the author from SAMA, 2008, p. 346 and Rosstat, 2009.

Needless to say, gains in final consumption in Russia were brought about by increases in personal income, which in turn were generated mostly by oil price increases. One of the reasons for the difference between the two countries is the larger share of personal consumption in the GDP of Russia (where it is almost 50 percent) compared to Saudi Arabia (where it was less than 30 percent in 2004–2007) (Table 5). The shares of gross capital formation are roughly at the same level, but Saudi Arabia exceeded Russia in the share of government consumption by 6 percentage points in 2004–2007 and almost 10 in 2000–2003.

The two countries differ considerably in the share of net exports in GDP. In Saudi Arabia, that share grew from 18.5 percent in 2000–2003 to 29.5 in 2004–2007, while the share of household consumption declined during that period; in fact, the shares of both exports and imports increased in 2004–2007 for Saudi Arabia. Although Russia's imports, valued in dollars, increased by 2.59 times and those of Saudi Arabia by 2.04 times (when comparing the averages for 2004–2007 with those for 2000–2003), 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 those of both countries, expressed in dollars, increased at almost the same rates during that period (2.41 times for Russia and 2.42 times for Saudi Arabia), the share of exports in the GDP of Saudi Arabia exceeded 60 percent in 2004–2007, much higher than the corresponding share of Russia (33.4 percent).

This difference is mostly due to a sharp appreciation of the ruble and the stability of exchange rates of the riyal. The ruble appreciated against the dollar by 15.0 percent annually

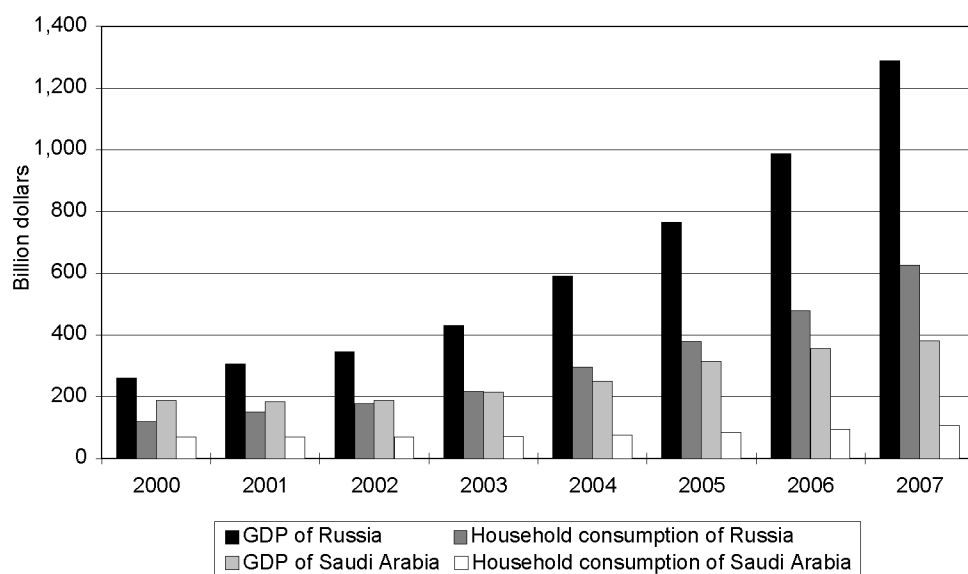


Fig. 5. GDP and household consumption of Russia and Saudi Arabia, converted into U.S. dollars at nominal exchange rates, 2000–2007, in billion dollars (household consumption includes NPO consumption). *Sources:* Calculated by author from SAMA (2008, p. 346) and Rosstat (2009).

during the period from 2000 to 2007 in real terms (deflated by consumer price indexes). On the other hand, as the riyal has been pegged against the dollar, and the inflation rate in Saudi Arabia has been low (6.0 percent in these eight years),¹⁵ the riyal appreciated only by 6.0 percent during the entire period. As a result of this difference in the dynamics of the exchange rate, exports and imports, valued in the national currency, have expanded more greatly than has domestic demand in Saudi Arabia, quite unlike in the case of Russia. Accordingly, Russia's GDP converted into dollars at nominal exchange rates grew fivefold from 2000 to 2007, while in Saudi Arabia, it has only doubled (Fig. 5). During that period, household consumption measured in dollars increased 5.3 times in Russia and 1.6 times in Saudi Arabia. While household consumption of Russia expressed in dollars exceeded that of Saudi Arabia by 1.7 times in 2000, the former surpassed the latter by 5.9 times in 2007.

The sharp appreciation of the ruble in real terms has resulted in considerable growth of demand by Russian households, which has largely been satisfied by imports. This did not happen in Saudi Arabia because the riyal, pegged against the dollar, has depreciated against other currencies in tandem with the dollar.¹⁶

Because Russia's imports have considerably increased in real terms, the contribution of net exports to GDP was generally negative from 2000 to 2007 (except for 2002 and 2003). Imports in SNA statistics grew by 21.4 percent annually in real terms and their contribution

¹⁵Calculated by the author from data of *IFS* origin.

¹⁶According to an indicator of nominal effective exchange rates of the riyal calculated by the International Monetary Fund (reported in *IFS*, n.d.), it has depreciated every year since 2002, and its depreciation has been larger in terms of real effective exchange rates, also calculated by the IMF.

Table 6. Oil and Gas Revenues of Russia and Saudi Arabia, 2000–2007, bill. dollars

Indicator	2000	2001	2002	2003	2004	2005	2006	2007
Russia								
Oil and gas exports	52.8	52.1	56.3	73.7	100.2	148.9	190.8	218.6
State budget revenues from oil and gas			19.3	27.5	43.3	82.5	115.1	120.6
State budget surplus ^a	4.9	9.1	3.1	5.7	26.3	62.2	82.8	78.4
Tax revenues from oil in Stabilization Fund	—	—	—	—	14.4	41.4	60.2	62.1
Saudi Arabia								
Oil and gas exports	70.7	59.6	63.6	82.0	110.4	161.1	187.7	205.5
State budget revenues from oil and gas	57.2	49.0	44.3	61.6	88.0	134.5	161.2	149.9
State budget surplus	6.1	-7.2	-5.5	9.6	28.6	58.1	77.3	56.1
Increase in net foreign assets of SAMA	9.7	0.8	-6.5	17.6	26.9	63.9	70.8	79.8

^aChange in the definitions of state budgets after 2004 are not taken into account.

Sources: Compiled from the author from Minfin, 2006; *IFS*, n.d.; Kaznacheystvo, 2008a, 2008b; *Rossiya*, 2008, p. 365; *Rossiyskiy*, 2008, pp. 635–636; SAMA, 2008, pp. 257, 305, and 336; and CBR, 2009.

to GDP amounted to minus 4–6 percent per annum. As for Saudi Arabia, imports (also in SNA statistics) increased by only 8.9 percent annually in real terms from 2000 through 2004. This growth of household consumption due to increases in imports has not been as striking in Saudi Arabia as in Russia.¹⁷

The response to growing household demand by expanding imports may be traced to policies of the Russian government intended to reverse the suppression of household consumption during the Soviet era. In other words, the government has not been willing to restrict imports of consumer goods for this particular reason since the collapse of the Soviet Union. One can even suggest that the liberalization of exchange markets and the resulting appreciation of the ruble were a means of distributing the rent revenues of the state to its citizens. Unlike in Russia, rent revenues have been distributed to Saudi citizens in the form of state budget expenditures such as salaries of civil servants, social benefits, and other subsidies (Hosoi, 2002, p. 238). On the other hand, preservation of the peg system with the dollar has become one of the most important policy goals in Saudi Arabia's relations with the United States (Wilson, 2004, p. 30).¹⁸

STATE BUDGET SURPLUS

The oil price increases have resulted in significant gains in state budget revenues derived from growing oil and gas exports, in both Russia and Saudi Arabia (Table 6). In Russia, the

¹⁷This might be related to the smaller size of the Saudi consumer market, given that country's smaller population (24 million people, i.e., one sixth of Russia's).

¹⁸This peg system was introduced in 1981, and Saudi monetary policy on interest rate adjustment has been guided by U.S. policy since that time (Ramady, 2005, pp. 90–91).

category “state budget revenues from oil and gas” includes excises, mineral extraction (severance) taxes, and export duties on crude oil, petroleum products, and natural gas.¹⁹ In 2007, the state budget absorbed 55.2 percent of oil and gas export revenues. In 2004, the government established the so-called Stabilization Fund of the Russian Federation, in which excess revenues derived from export duties and severance taxes on crude oil were to be accumulated.²⁰ Because the tariffs regulating both taxes were automatically determined in proportion to the price of Urals crude, the oil and gas revenues of the state budget have been rapidly expanding (especially since 2004), in tandem with increases in oil and gas exports, prompting in turn the growth of state budget surpluses. The share of the two taxes on crude oil accounted for ca. 72 percent of total state budget revenues from oil and gas (as defined in Table 6) during the period from 2005 to 2007. Clearly, a considerable share of the budget surpluses were accumulated in the Stabilization Fund.

With regard to Saudi Arabia, the “state budget revenues from oil and gas” in Table 6 are simply referred to as “oil revenues” in the state budget statistics published in SAMA (2008, p. 305). This item seems to include corporate income taxes paid by oil companies, royalties, and other levies (Fukuda, 2001, p. 11).²¹ According to Table 6, an average of 78.7 percent of all oil and gas export revenues were received by the state budget during the eight year period from 2000 to 2007. While dependence of state budgets on oil and gas has been substantial in both countries, it appears to have been higher in Saudi Arabia than in Russia.

The accumulation of oil revenues in Saudi Arabia, for which the central bank of Saudi Arabia, called the Saudi Arabian Monetary Agency (SAMA), is responsible, is quite unique and nontransparent.²² A considerable part of oil export revenues, generated exclusively by Saudi Aramco, finds its way into the state budget as “oil revenues” in *dollars* (Ramady, 2005, pp. 94–95). And if some revenues are not used (i.e., if there are budget surpluses), they are accumulated as foreign assets of SAMA. Accordingly, the state budget surpluses were accompanied by increases in the net foreign assets of SAMA (Table 6). This aspect of the Saudi system therefore is reminiscent of the “state monopoly of foreign trade” or “special foreign trade earnings” during the Soviet era.²³

As shown in Figure 6, compiled from Table 6, the volume of state budget surpluses in the two countries has been approximately similar since 2004. Although the accumulated surpluses have been larger in Saudi Arabia than in Russia, the trends are basically the same. It is therefore safe to suggest that Russia succeeded in creating a mechanism (in 2004) that

¹⁹“State budget revenues from oil and gas” were published in Minfin (2006) for the first time in Russian history (data are not available for years prior to 2001). In addition to three taxes cited in the text above, they include profit taxes from firms, stock dividends and incomes from other forms of participation in state-owned capital, and revenues of the joint venture V’yetsovpetro. For example, in 2005 “state budget revenues from oil and gas” reported in Minfin (2006) amounted to 91.4 billion dollars, differing by 8.9 billion dollars from the figure shown in Table 6 (82.5 billion dollars); value-added taxes from the oil and gas sector are not taken into account in that table as well.

²⁰This fund was transformed into two funds at the beginning of 2008 (see Tabata, 2007).

²¹According to the corporate tax law enacted in July 2004, the tariff that regulates corporate income taxes for oil companies amounts to 85 percent (Niblock, 2007, p. 189).

²²Lack of transparency in the Saudi system is stressed by Champion (2003, p. 179). It should be noted that Saudi Arabia only joined the World Trade Organization (WTO) in 2005, after 12 years of negotiations.

²³Special foreign trade earnings comprised the incomes of foreign trade organizations that monopolized foreign trade activities under the Soviet system. They included trade surpluses from transactions with foreign firms (settled in foreign currencies) and profits from transactions with domestic firms (sales of imported goods minus purchases of exported goods), settled in domestic rubles. The task of converting trade surpluses into domestic rubles became one of the core problems confronting analysts and statisticians (Trembl and Kostinsky, 1982).

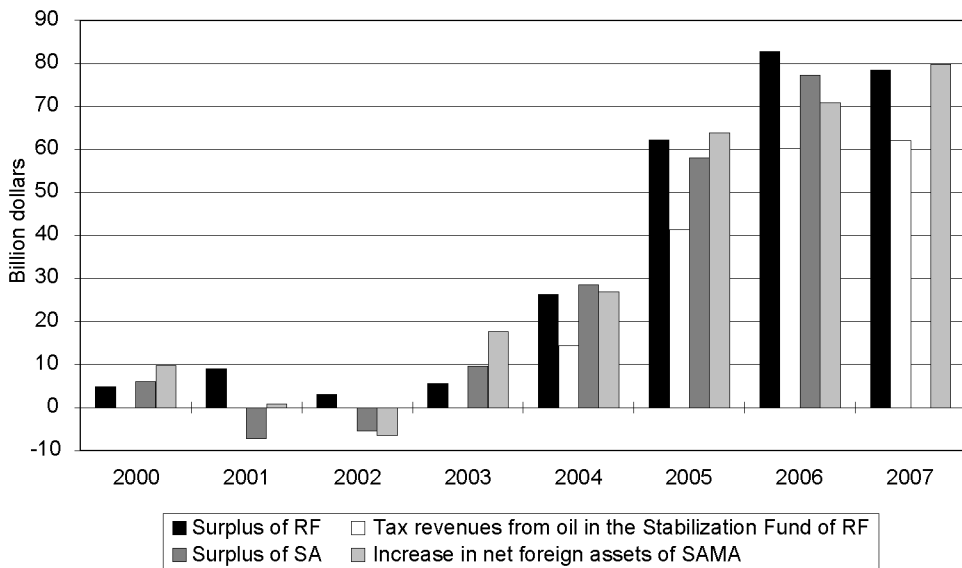


Fig. 6. State budget surpluses and their accumulation in Russia (RF) and Saudi Arabia (SA), 2000–2007, in billion dollars.

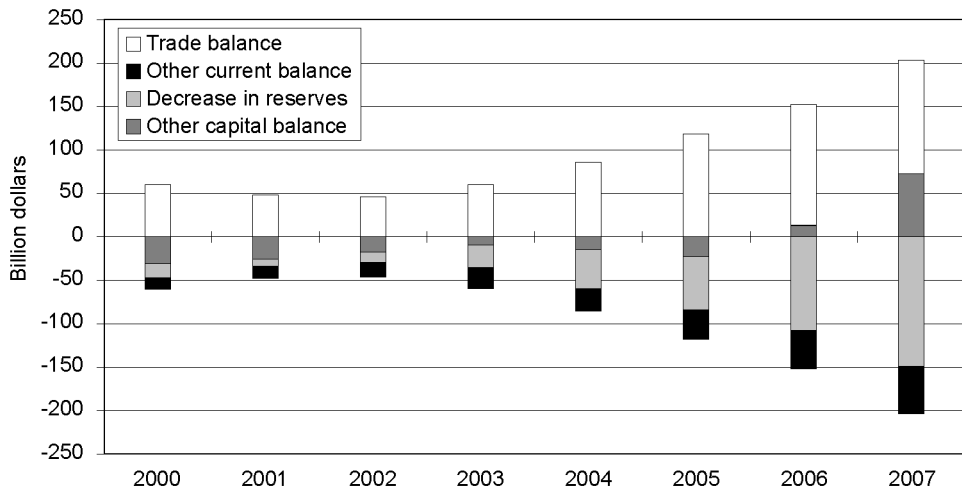


Fig. 7. Balance of payments of Russia, 2000–2007, in billion dollars.

enables the absorption of a considerable part of oil and gas export revenues by the state budget and the accumulation of the surpluses in the Stabilization Fund, which functioned as a sovereign wealth fund. It should be noted that efforts to secure tax revenues from oil and gas companies are far more complex in Russia than in Saudi Arabia, where only one state-owned company pays almost all oil revenues.

There are, however, negative consequences of rising oil and gas exports from Russia. Because of immense increases in the country's trade balance (Fig. 7, compiled from CBR,

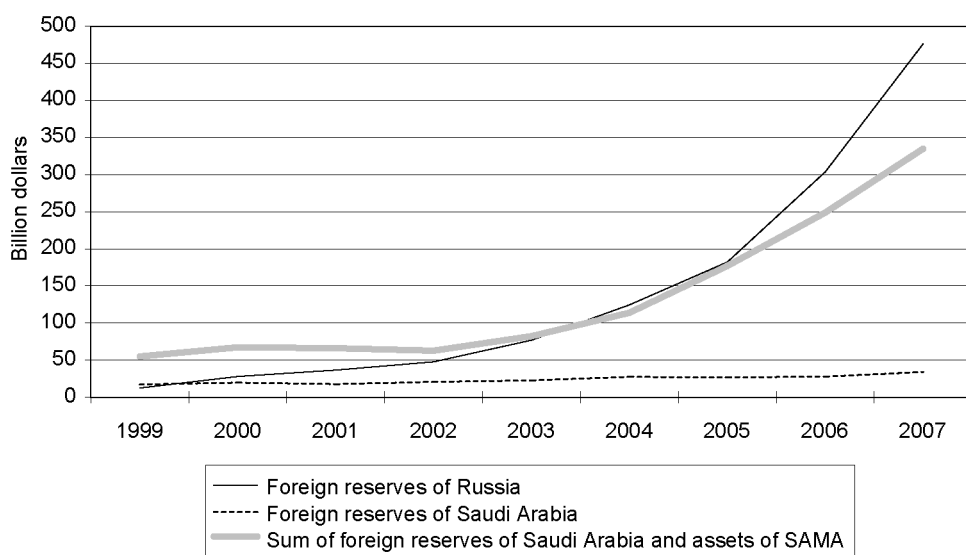


Fig. 8. Comparison of foreign reserves of Russia and Saudi Arabia, 1999–2007, in billion dollars at year end. *Sources:* Compiled by the author from SAMA (2008, pp. 257–259) and CBR (2009).

2009), monetary authorities had to intervene in exchange markets in order to mitigate the appreciation of the ruble, and thus alleviate the suffering from “Dutch disease” experienced by Russia’s domestic industries. Although the ruble appreciated threefold during the period from 2000 to 2007, the official foreign reserves of Russia increased from 12.5 billion dollars in 1999 to 476.4 billion in 2007 as a result of the interventions (end of year; see Fig. 8). The average annual increases were 59.8 percent during the period, so that the money supply (M2 in the Russian definition) skyrocketed. The average annual increase in money supply during this period (1999–2007) amounted to 44.4 percent, precipitating a correspondingly high average rate of inflation—i.e., increase in the consumer price index—of 13.7 percent for the period.

In contrast, the average annual increase of money supply (M2) in Saudi Arabia was only 12.3 percent and the average inflation only 0.7 percent from 2000 to 2007.²⁴ The substantial difference was due to a peculiar system of controlling foreign currencies by SAMA, which has explained the procedure as follows:

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 includes currency in circulation and customer deposits with commercial banks. Only when the government injects this revenue into the domestic income stream, through its domestic expenditure,

²⁴Calculated from SAMA (2008, pp. 250, 307). The consumer price index (CPI) of Saudi Arabia increased 2.2 percent in 2006 and 4.1 percent in 2007. The contribution of foods has been significant in these years. In 2007, food and “renovation, rent, fuel, and water” accounted for 40.3 and 32.0 percent, respectively (SAMA, 2008, p. 107). As for Russia, the inflation rate accelerated to 11.9 percent in 2007, with foods accounting for 52.7 percent and services 27.6 percent of the increase (calculated from Rosstat, 2009).

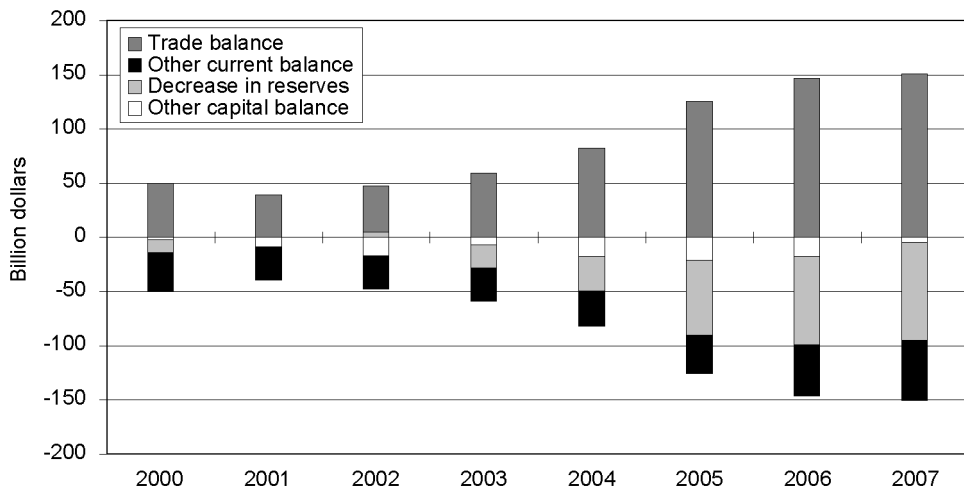


Fig. 9. Balance of payments of Saudi Arabia, 2000–2007, in billion dollars. *Source:* Compiled by the author from SAMA (2008, pp. 333–336).

the inflow of foreign exchange is turned into domestic liquidity (SAMA, 2008, p. 46).²⁵

Because the inflows of foreign currencies into exchange markets are substantially limited due to the tax payments by Saudi Aramco in dollars, there appears to be no need for intervention by SAMA in order to preserve the fixed exchange rate system. Apparently, this is the reason why the foreign assets of SAMA are not regarded as reserve assets of the country (Fig. 8).²⁶

We should thus not hesitate to regard the sum of official foreign reserves and net foreign assets of SAMA as the “real” foreign reserves of Saudi Arabia.²⁷ In this case, similar developments in foreign reserves in recent years can be seen for both Russia and Saudi Arabia (Fig. 8). If interpreted in this way, Saudi Arabia’s balance of payments statistics (Fig. 9) exhibit the same trends as the Russian counterpart (Fig. 7).²⁸ Both show increasing trade surpluses, negative “other current balances” (mostly the service balances), and

²⁵See also Ramady (2005, pp. 94–97).

²⁶*The Balance of Payments Manual* of the IMF defines reserve assets as follows: “. . . external assets that are readily available to and controlled by monetary authorities for direct financing of payments imbalances, for indirectly regulating the magnitude of such imbalances through intervention in exchange markets to affect the currency exchange rate, and/or for other purposes” (IMF, 1993, paragraph 424).

²⁷Volumes of net foreign assets of SAMA are reported in the statistics of monetary assets (SAMA, 2008, p. 257). They comprise “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 the “Balance Sheet of SAMA” included in the *Quarterly Statistical Bulletin of SAMA*.

²⁸Figure 9 is based on the balance of payments statistics released by SAMA (2008, pp. 333–336), which show “real” foreign reserves as “official capital and reserves.” They largely differ from the balance of payments statistics reported in *International Financial Statistics*. For the definition of the foreign reserves of Saudi Arabia reported in *IFS* and its change in 1996, see Champion (2003, pp. 162–163).

growing reserves (negative signs for reserves denote their increases in the balance of payments statistics).²⁹

Apparently, Saudi Arabia invented this unconventional system in the 1980s in the course of its struggle to deal with increasing oil export revenues. It is difficult to judge which system is better equipped to cope with them—the liberalized system of Russia or the nontransparent one of Saudi Arabia. It seems apparent, however, that its efforts to break with the past system after the collapse of the Soviet Union made it impossible for Russia to maintain a system similar to Saudi Arabia's. It thus follows from the analysis in this section of the paper that growth in money supply and inflation caused by oil price increases may be viewed as a cost associated with opting for a liberalized system.³⁰

CONCLUDING REMARKS

The major findings presented in this paper about the influence of oil price increases on the Russian economy can be summarized as follows:

1. The impact of oil price increases on GDP growth has been ambiguous in Russia for two reasons. First, the growth of the oil and gas sector has had less of a direct impact on GDP growth in Russia than with Saudi Arabia because of the smaller share of the sector in the Russian economy. Second, GDP indicators do not fully account for the growth of national income caused by increases in the prices of exported commodities, unless these price increases precipitate an increase in their production. In Russia, the rise in the price of oil seems to have stimulated all sectors of the economy through improvement in the terms of trade or expansion in trade gains.

2. It is considerably more evident in Russia than in Saudi Arabia that economic growth has been driven by increasing household consumption, mostly resulting from oil price increases. Statistically, it can be explained in part by the larger share of personal consumption due to appreciation of the national currency. In the context of domestic policy, it has been promoted by the liberalization policies of exchange markets, which caused the appreciation of the ruble and, in turn, the rapid expansion of imports of consumer goods.

3. The oil price increases have resulted in significant increases in state budget revenues from expanding oil and gas exports. Russia has clearly succeeded in creating a mechanism that enables the absorption of a considerable part of oil and gas export revenues by the state budget and the accumulation of the ensuing surpluses in a sovereign wealth fund. The magnitudes of state budget surpluses and their accumulation were approximately the same in Russia and Saudi Arabia. As for Russia, the considerable increase in money supply caused by increases in interventions in the exchange markets by monetary authorities, as well as the rapid inflation that the growing supply has fueled, may be regarded as inevitable, at least to a degree, within the framework of liberalized exchange markets.

²⁹The largest difference was observed in 2007, when Russia recorded a huge net private capital inflow due 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 immense increase in borrowing from abroad during the first half of 2007 was reported to be due to the purchase of Yukos assets (*Rossiyskaya biznes-gazeta*, March 4, 2008, p. 2). *Kommersant* (July 9, 2007, p. 11) reported that in the first half of 2007 Rosneft' purchased assets of Yukos by paying \$25.14 billion, and Gazprom followed suit in the form of a \$5.8 billion payment in April 2007. Both appeared to finance their purchases by securing loans from abroad.

³⁰The liberal environment and openness of the Russian exchange market system and policies have been emphasized in Uegaki (2004).

The impacts of the drastic oil price declines precipitated by the deepening economic crisis that have emerged in the fall of 2008 cannot yet be properly evaluated. However, they warrant careful future study with due attention to the relationships identified here.

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