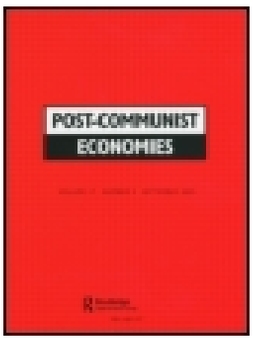

Routledge
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Post-Communist Economies

ISSN: 1463-1377 (Print) 1465-3958 (Online) Journal homepage: http://www.tandfonline.com/loi/cpce20

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To cite this article: Victoria Dobrynskaya & Edouard Turkisch (2010) Economic diversification and Dutch disease in Russia, Post-Communist Economies, 22:3, 283-302, DOI: 10.1080/14631377.2010.498680

To link to this article: http://dx.doi.org/10.1080/14631377.2010.498680

Post-Communist Economies
Vol. 22, No. 3, September 2010, 283–302

Economic diversification and Dutch disease in Russia

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(*Received 14 December 2009; final version received 17 February 2010*)

Despite the impressive economic growth in Russia between 1999 and 2007 there is a fear that Russia may suffer the Dutch disease, which predicts that a country with large natural resource rents may experience de-industrialisation and lower long-term economic growth. This article examines whether there are any symptoms of the Dutch disease in Russia. Using a variety of Rosstat publications and the CHELEM database, we analyse the trends in production, wages and employment in Russian manufacturing industries, and we study the behaviour of Russian imports and exports. We find that, while Russia exhibits some symptoms of the Dutch disease, e.g. the real appreciation of the ruble, the rise in real wages, the decrease in employment in manufacturing industries and the development of the services sector, manufacturing production nonetheless increased, contradicting the theory of the Dutch disease. These trends can be explained by the gains in productivity and the recovery after the disorganisation in the 1990s, by new market opportunities for Russian products in the European Union and in CIS countries, by a growing Chinese demand for some products and by a booming internal market. Finally, investment in many manufacturing industries was largely encouraged, whereas investment in the energy sector was strongly regulated, which contributed to economic diversification.

From 1999 until the 2008 financial crisis the improvement of the economic situation in Russia was impressive. GDP growth averaged 7% per year in real terms, consumption was increasing and the unemployment rate was steadily falling. This economic record was driven by rising resource prices, which led to windfall gains in export revenue. There is, however, a fear that the Russian economy may become too dependent on the energy sector and not sufficiently diversified. This perceived risk influenced monetary policy, which was aimed at preventing the nominal appreciation of the ruble by accumulating foreign exchange reserves.

Indeed, many countries endowed with natural resources suffer the Dutch disease. On one hand, the increased profitability in the resource sector due to higher resource prices attracts labour and investment out of the manufacturing sector. Hence, the sectors linked to natural resources, as well as the services sector, for which demand increases in response to higher incomes, become more attractive. On the other hand, the propagation of the increases in wages across all sectors as well as the increased demand for the domestic

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ISSN 1463-1377 print/ISSN 1465-3958 online

DOI: 10.1080/14631377.2010.498680
http://www.informaworld.com

currency and its resulting appreciation make manufactured goods more expensive and hence less competitive in both home and world markets. Both effects contribute to a de-industrialisation process that makes the economy extremely dependent on the resource sector and may reduce the growth potential.

In this article we study the economic performance of Russia between 1999 and 2007. We combine data from a variety of publications by Rosstat, the Russian state statistics agency, and the CHELEM database, provided by the CEPII; we analyse the trends in production, wages and employment by sectors, as well as the trends in Russian exports and imports of manufactured products; and we put these data in perspective with the Russian context, which presents specific features that make interpretation more difficult.

We find that Russia suffered some symptoms of the Dutch disease, in particular, the appreciation of the ruble in real terms from 1997 to 2007, the decrease in employment in manufacturing and the rise in the services sector. However, manufacturing production also increased, which contradicts the theory of the Dutch disease. Furthermore, the symptoms present in Russia could also have been driven by other factors. For instance, the appreciation of the ruble in real terms came partly from the Balassa–Samuelson effect, the quick growth of the services sector was partly due to the fact that it was not very developed during the Soviet period, and the outflow of employees from manufacturing did not result in an inflow to the resource sector but rather to the services sector.

The strong growth of industrial production despite the presence of some symptoms of the Dutch disease can be explained by various factors. First, a natural catching-up process after the de-industrialisation in the 1990s can partly explain the very high productivity gains in industry and hence the increase in manufacturing production despite a significant decrease in employment. Second, Russian products did not particularly suffer a loss of competitiveness. Despite the real appreciation of the ruble, the share of Russian manufactured exports in world trade increased from 2001 to 2007. In particular, new market opportunities were developed in the European Union, where Russian products remained competitive, and in other CIS countries, which did not have sufficient industrial capacity to meet their internal demand and which were historically linked to Russia. We also observe that Chinese demand for some Russian products increased. On the domestic market, the booming internal demand, supported by rising terms of trade and increasing export revenues, has contributed to supporting domestic production. The rise in imports of manufactured goods in Russia has been mainly in sectors that either were not present in Russia before or suffered from competition with the growing Chinese production. Third, whereas investment in 'strategic sectors' (in particular in the energy sector and the banking and insurance area) is subject to restrictions, investment in most manufacturing industries was largely encouraged, and the investment environment in these sectors has improved significantly. Hence, thanks to the high skills available in the Russian labour market and the relatively low costs of production, much investment went into the manufacturing industries in Russia.

From 1999 to 2007 the factors that stimulated the production of manufacturing industries outweighed the negative effects of the real appreciation of the ruble. However, even if one leaves aside the consequences of the international economic slowdown in 2008, there is still the risk that the situation may change in the longer term because of increasing international competition.

In terms of monetary policy, since high inflation is a growing concern and since the ruble was appreciating in real terms despite the policy of prevention of nominal appreciation, the Russian Central Bank is going to switch from exchange rate targeting to

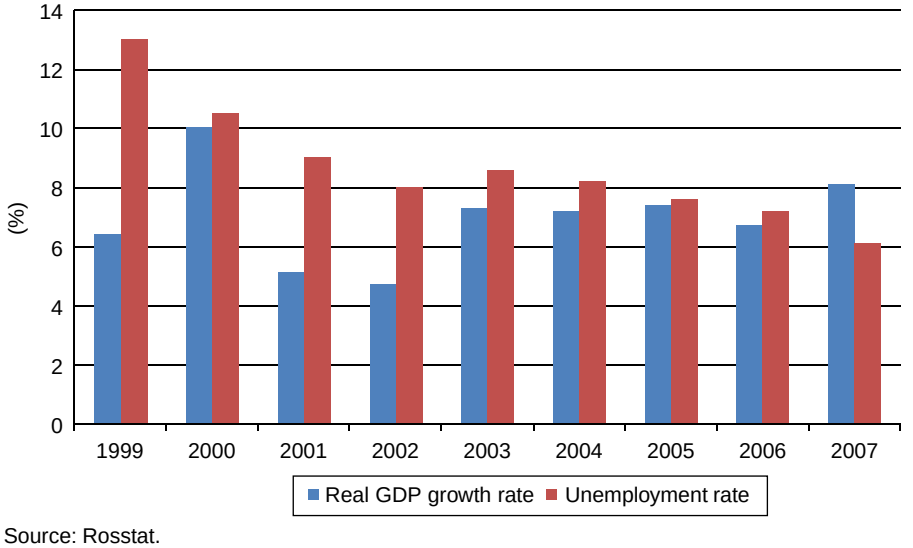
inflation targeting in the medium term, making the exchange rate more freely floating. The change in the monetary policy targets is proceeding slowly, though, as Russian monetary policy is confronted with different interacting effects, accompanied by many uncertainties and difficulties in evaluating the situation in the longer term.

Economic growth, monetary policy and inflation

The economic record of Russia can appear surprising in many respects. After the 1990s, marked by disorganisation of the economy and the crisis of 1998, the macroeconomic stabilisation and improvement of the economic situation have been impressive. From 1999 until the financial crisis of 2008 GDP growth averaged 7% per year in real terms, while consumption was also increasing and the unemployment rate was steadily falling (Figure 1). Despite a slowdown in the economy related to the international crisis, GDP is expected to grow again from 2010.[1]

One of the factors that contributed to this improvement is the situation in the world market for natural resources. After a plunge in 1997–98, the crude oil price showed a significant upward trend, rising from USD 10 to USD 100 per barrel between 1999 and 2007. Since then the price has been highly volatile, but it remains significantly higher than at the beginning of the 2000s.

For Russia, this generated a windfall rise in export revenue and a huge inflow of 'petrodollars'. This created an upward pressure on the domestic currency and, therefore, over the last few years the main goal of Russian monetary policy was to prevent the nominal appreciation of the ruble. Vdovichenko and Voronina (2004) found empirically that after 1999 the major efforts of the Bank of Russia were aimed at affecting the exchange rate smoothness and level, rather than the inflation rate.[2] Moreover, as argued by Dobrynskaya (2008), monetary policy in Russia was asymmetric, with appreciations smoothed while depreciations were accommodated. The Central Bank of Russia itself admitted officially in its policy guidelines that over recent years it 'constrained ruble



Source: Rosstat.

Figure 1. Rates of GDP growth and unemployment.

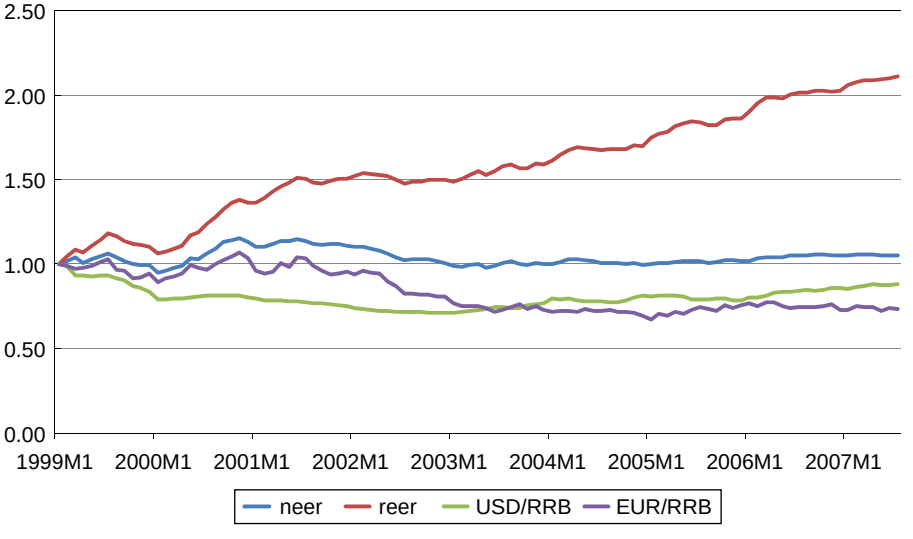
appreciation in order to help maintain the competitiveness of Russian goods on international and domestic markets' and that 'the policies of the Bank of Russia and the Ministry of Finance (the administrator of the stabilisation fund) throughout the period 2000–05 kept the ruble's value 8.5% cheaper than its equilibrium value'.[3]

In order to prevent the appreciation of the ruble against a basket of currencies,[4] the Central Bank of Russia accumulated foreign currency reserves. The resulting growth in the money supply, although partially absorbed by the stabilisation fund, contributed to high inflation in Russia. Moreover, as the US dollar was depreciating against the euro, to maintain the basket, the ruble should have been depreciating against the euro in nominal terms. This contributed to imported inflation, as the euro area is a major exporter to Russia. In recent years this policy led to a large real appreciation of the ruble instead of its nominal appreciation at the expense of high inflation. This is illustrated in Figure 2, which presents the dynamics of the real and the nominal effective and bilateral exchange rate indices of the ruble until 2006 (normalised to 1 in January 1999).

High inflation is a phenomenon which affects the whole country on different scales, and Moscow has been classified as one of the most expensive cities in the world. While the inflation target was set at 6.5–8% for 2007,[5] the actual CPI inflation was 11.9%. It reached around 13.5% in 2008 and was expected to stay above 11% in 2009 despite the economic slowdown.[6] Moreover, if we look at the inflation level of particular food and service categories (Table 1), we can understand why there is so much debate about the recent monetary policy strategy.

The reasons for exchange rate targeting and the risk of the Dutch disease

The rationale for exchange rate targeting, as claimed by the government and the monetary authorities, was to maintain the competitiveness of the domestic manufacturing industries.



Note: neer (nominal effective exchange rate) and reer (real effective exchange rate) are calculated as trade-weighted exchange rates.
Source: International Financial Statistics.

Figure 2. Exchange rate indices of the ruble.

Table 1. Inflation rates for specific items (% per year).

	2006	2007
CPI	**9.0**	**11.9**
Food	**8.7**	**15.6**
Bread and bakery products	11.1	22.4
Milk and dairy products	8.7	30.4
Butter	6.8	40.3
Vegetable oil	− 1.2	52.3
Fruit and vegetables	10.3	22.2
Non-food goods	**6.0**	**6.5**
Services	**13.9**	**13.3**
Housing and public utilities	17.9	14.0
Public health	13.6	13.9
Passenger transport	14.2	13.6
Child care in pre-school institutions	28.5	11.8
Education	15.5	15.4
Everyday services	13.2	14.4

Source: Rosstat.

The common belief that ruble appreciation in nominal terms, leading to higher export prices, might result in slower and insufficiently diversified economic growth in Russia, with excessive dependence on the energy sector, is the main official reason why the Central Bank of Russia pursued this policy.

Empirical research does suggest that countries with large natural resource wealth tend to have lower long-run real GDP growth than comparable countries without natural resources, and that they may suffer de-industrialisation driven by a loss of competitiveness in manufacturing industries due to the appreciation of the domestic currency. Sala-i-Martin (1997) and Doppelhofer *et al.* (2004) perform empirical tests of cross-country data and classify natural resources as one of the most robust variables which negatively affect countries' economic growth. Sachs and Warner (1997) also find a negative relationship between resource abundance and growth, which applies more to oil than to other natural resources. However, their panel includes many countries with political instability or other governance issues, which could also explain the lack of economic growth.

As observed in a number of resource-exporting economies, an exogenous rise in resource prices leads to a windfall increase in export revenue that creates pressure on the value of the domestic currency. As a consequence, manufacturing production declines. This phenomenon is known as the Dutch disease, which is characterised by a rapid appreciation of the domestic currency (symptom 1), growth in wages in the domestic economy (symptom 2), growth in the service sector (symptom 3) and, following the first three symptoms, a slowdown of industrial production (symptom 4).[7] The fear that Russia may suffer the Dutch disease and the uncertainty concerning the possible impact of ruble appreciation on production and employment in the domestic manufacturing sector is the main reason for the significant foreign exchange interventions by the Russian Central Bank.

Several studies have tried to determine whether Russia is suffering from the Dutch disease. Although they find some symptoms of it, the disease cannot be confirmed (e.g. Oomes and Kalcheva 2007). For countries in transition or which have faced recent structural changes, it could be even more difficult to analyse the symptoms of the Dutch disease. For instance, while the real appreciation of the ruble (symptom 1) is obvious from the data and is somehow linked to the rising oil revenue (as is confirmed empirically by

Sosunov and Zamulin (2006), there are other factors which might have contributed to such appreciation. In particular, the appreciation may be partly due to rising domestic productivity relative to trading partners (the Balassa–Samuelson effect).[8] Indeed, productivity gains have been large in Russia, in particular in the manufacturing sector. For instance, labour productivity in the manufacturing sector more than doubled between 1999 and 2007 (+114%), whereas labour productivity in the total economy increased by 15.4% in the United States and by 6.1% in the euro area over the same period.[9]

Furthermore, the hypothesis that ruble appreciation has affected industrial production negatively still needs to be confirmed. Indeed, in spite of the appreciation of the ruble in nominal terms, which is far less significant than in real terms though, production in Russian manufacturing industries continued to grow significantly until mid-2008. Therefore, we must analyse whether symptoms 2, 3 and 4 of the Dutch disease are present in Russia and also whether ruble appreciation is likely to harm the Russian economy in the future.

Symptom 2: A rise in real wages in the economy

Table 2 presents average yearly growth rates of real CPI-adjusted wages in different sectors of the Russian economy. The last column presents the overall growth rates during 2000–07. We see that, after a dramatic fall by 40% in the crisis year 1998 due to the unexpected inflation hike, real wages grew at a significant rate, averaging 14% per year between 1999 and 2007, compared with 7% average growth of real GDP. When oil prices started rising in 1999–2000 the highest wage growth was observed, unsurprisingly, in the oil extracting industry. The finance industry was in second place at that time. Then wages in other sectors started to adjust. As a result, the highest total growth rates during 2000–07 were observed in the manufacture of machinery and equipment, agriculture, trade, financial intermediation, education, health and social work, catching-up with the finance and oil sectors.

The Dutch disease hypothesis states that the higher wages in the resource sector attract labour from other sectors, thus reducing employment in the manufacturing sector. This may be accelerated by a loss of competitiveness in manufacturing. Did we observe this trend in Russia? Table 3 shows that while the total employment in the economy was rising steadily during 1999–2007, employment in the manufacturing industries fluctuated, with several decreases after 2002. The relative share of employment in all manufacturing sectors decreased as well (Table 4). However, contrary to what the Dutch disease predicts, employment in the fuel industry also declined after 2002, and even at a higher rate. Therefore, although we find some signs of symptom 2 in Russia, the hypothesis that higher resource prices attracted labour to the resource industry cannot be confirmed.

Symptom 3: Growth in the services sector

The observed contraction of manufacturing employment despite the increased total employment in the economy can be explained by the fact that workers moved to the services sector, primarily the finance, trade and construction sectors (Tables 3 and 4), which offered relatively higher wages during that time. Although this is consistent with the Dutch disease, there are several other potential explanations for such a trend. First, there was a focus on industries and not on services during the Soviet period. Therefore the services sector was relatively underdeveloped and has expanded significantly since the mid-1990s. Second, technological renovation and advances in the manufacturing sector might have led to the reduced demand for labour in this sector. Third, it has become

Table 2. Real wage growth rate in selected sectors (% of previous year).

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*	2000–2007
Total in the economy	8.3	−40.0	6.1	21.5	22.9	16.9	12.6	9.7	14.5	15.0	10.1	157
Manufacturing**	9.6	−38.0	11.5	23.8	22.9	11.9	12.7	9.4	10.9	11.7	11.5	134
food	6.5	−39.5	9.2	10.0	20.7	13.0	10.4	8.0	8.6	9.5	12.1	117
textiles	11.0	−39.3	11.6	22.2	22.5	10.4	11.6	7.2	7.1	11.9	**16.7**	126
wood and wood products	5.9	−40.6	**16.2**	19.5	12.0	12.1	12.5	10.0	15.2	12.0	10.3	121
paper products, publishing and printing	n/a	n/a	n/a	n/a	**32.8**	10.5	11.6	3.2	7.6	9.1	10.2	118
chemicals	11.6	−36.3	11.6	18.3	19.4	9.1	12.2	11.7	16.5	11.6	5.6	124
rubber and plastic products	n/a	n/a	n/a	n/a	19.4	13.4	11.7	7.7	4.1	**18.0**	13.6	128
metal products	3.6	−41.4	14.5	27.0	14.7	4.2	9.8	6.5	0.6	8.1	9.1	66
machinery and equipment	**11.8**	−37.3	9.1	**28.3**	31.2	15.0	13.5	**12.8**	16.0	15.4	**15.9**	**200**
electrical, electronic and optical equipment	n/a	n/a	n/a	n/a	26.2	10.5	**19.5**	**12.7**	15.2	13.9	12.4	177
transport equipment	n/a	n/a	n/a	n/a	25.9	20.9	11.4	10.1	8.0	11.9	8.0	144
oil refining	8.7	−41.6	16.8	26.6	20.3	19.3	10.2	3.5	**27.4**	6.6	10.7	146
Oil extracting	10.6	−47.7	**30.7**	**46.1**	**31.6**	4.2	10.1	10.4	6.3	8.1	5.0	101
Agriculture	3.6	−42.3	−1.4	17.8	22.8	13.6	11.3	**15.4**	9.0	15.2	**17.5**	164
Construction	**13.7**	−40.9	−0.8	22.8	23.3	8.2	14.7	5.9	11.6	14.2	10.4	128
Wholesale and retail trade	10.7	−39.1	5.6	14.2	22.1	16.2	**15.6**	10.5	**20.4**	16.3	11.7	184
Transport and communication	5.7	−38.8	11.3	20.0	12.7	18.1	14.0	11.7	9.8	7.6	9.4	119
Financial intermediation	−0.4	−32.6	**23.0**	**29.4**	**43.2**	**29.5**	4.9	0.0	16.5	13.5	10.0	183
Public administration and defence	**17.8**	−40.6	1.1	22.2	16.7	20.3	**18.7**	2.3	**25.1**	10.8	6.9	153
Education	0.7	−41.9	−1.8	15.2	24.6	**38.7**	3.3	11.1	16.5	**18.0**	10.5	**202**
Health and social work	−1.2	−41.0	−1.7	14.6	23.9	**39.3**	4.1	**12.7**	15.5	**25.7**	9.2	**221**

Notes: *January–November 2007. The figures are underestimated due to December bonuses.
**Manufacturing includes resource sectors before 2001 but not afterwards.
n/a – not available due to the change in industrial classification by Rosstat.
The real wage growth is calculated with a CPI deflator.
The three highest growth rates in each year are in bold.
Source: Rosstat.

Table 3. Growth rate of employment by sector (% of previous year).

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total in the economy	0.2	0.6	0.6	1.0	−0.2	0.4	0.8	0.6	0.8
Manufacturing*	1.0	1.7	1.0	−1.1	−2.7	−1.5	−1.1	−1.3	0.2
Mining and quarrying	n/a	n/a	n/a	n/a	n/a	n/a	−2.0	−0.8	−0.5
Oil extraction	−9.7	2.3	30.0	−4.6	−3.0	−8.7	n/a	n/a	n/a
Oil refining	−5.8	0.0	−1.8	−6.3	−2.9	1.0	n/a	n/a	n/a
Coal	−8.7	−4.9	−1.1	−5.3	−7.5	−6.4	n/a	n/a	n/a
Electricity, gas and water supply	n/a	n/a	n/a	n/a	n/a	n/a	0.7	0.6	−1.1
Energy	4.5	3.8	3.2	−1.5	−3.8	−2.8	n/a	n/a	n/a
Gas	9.1	3.3	6.4	6.1	2.9	4.2	n/a	n/a	n/a
Agriculture	−2.6	−1.5	−5.2	−3.2	−4.5	−5.8	−4.3	−3.3	−5.4
Construction	−0.2	−1.6	0.3	−0.7	0.5	1.2	4.4	3.2	3.8
Wholesale and retail trade	0.1	1.1	6.1	8.4	2.7	2.5	3.2	2.1	4.1
Transport and communication	1.4	1.9	0.1	0.1	0.8	0.0	0.1	1.1	0.2
Financial intermediation	1.1	−0.3	6.1	3.7	6.6	5.1	6.5	11.7	9
Public administration and defence	2.9	2.3	−1.5	3.0	0.5	3.1	2.6	1.3	1.3
Education	0.3	−1.1	−0.2	0.5	0.7	2.0	0.9	−0.5	−0.3
Health and social work	0.9	0.2	0.6	1.3	0.9	2.3	0.6	0.6	0.3

Notes: *Manufacturing includes resource sectors before 2005 but not afterwards.
n/a – not available due to the change in industrial classification by Rosstat.
Source: Rosstat.

Table 4. Distribution of employment across sectors (% of total).

	1998	2001	2004	2007
Total in the economy	100	100	100	100
of which				
Manufacturing	22.2	22.7	22.1	21.1
including:				
Mining and quarrying	n/a	n/a	1.6	1.5
Electricity, gas and water supply	n/a	n/a	2.9	2.8
Agriculture	13.7	12.3	11.2	10.0
Construction	8.0	7.8	7.1	7.8
Wholesale and retail trade	14.6	15.4	16.3	17.4
Transport and communication	7.6	7.8	8.0	8.0
Financial intermediation	1.1	1.2	1.3	1.6
Public administration and defence	4.4	4.5	5.2	5.2
Education	9.3	9.0	9.2	8.9
Health and social work	7.0	7.0	6.8	6.8
Other sectors	12.1	12.3	12.8	13.2

Notes: n/a – not available due to the change in industrial classification by Rosstat.
Source: Rosstat.

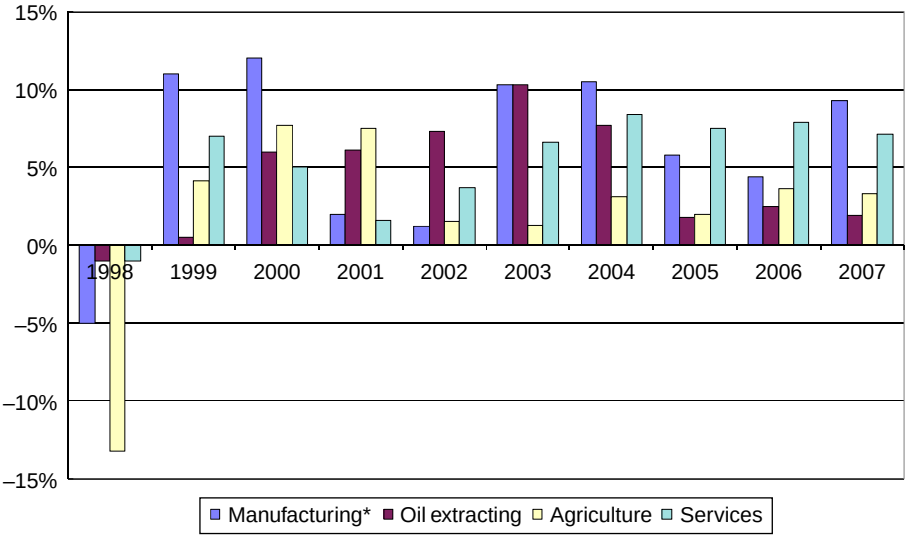
prestigious to work in the services sector, especially in finance. Therefore, although we can observe symptom 3 of the Dutch disease, the expansion in the services sector did not result only from the rising export revenue and social welfare.

We should also note that employment in public administration and defence greatly increased after 1995, especially in 1995 and 1996, despite the relatively low level of pay compared with the private sector. This was due in particular to the expansion of government at the regional level, where wages in the civil service were not so unfavourable compared with the private sector. Some studies (for instance World Bank 2003, 2006) argue that regional governments hired staff partly in order to fight unemployment (in particular during the economic disorganisation in the 1990s) but also mainly because they considered they did not have enough staff. These studies show that the level of employment in public administration and defence indeed remains relatively low in Russia compared with OECD countries. Nevertheless, as total employment in the economy increased and as the increase in employment in public administration occurred mostly before 1998, the latter cannot easily be related to the Dutch disease.

Symptom 4: A slow-down in industrial production

From 1999 until the financial crisis of 2008 and the possible effects of the world economic slowdown manufacturing output was growing in spite of the outflow of labour from the manufacturing sector. This sector even outperformed the services and oil extracting sectors, as indicated in Figure 3.

Table 5 shows the production growth rates by industry, with the growth rates of the three leading industries each year in bold. We see that the oil extracting industry was among the leaders only once and the services sector only twice from 1999 to 2007, while the fastest growth was consistently observed in some manufacturing industries, in particular rubber and plastics, machinery and all types of equipment. Also, the average yearly growth rate in overall manufacturing during 1999–2007 was higher than that of oil extracting, agriculture and services (7.4%, 4.9%, 3.8% and 6.1% respectively). While in the early 2000s there was a slowdown in the growth rate of industrial production in Russia,



Note: *Manufacturing includes resource sectors before 2001 but not afterwards.
Source: Rosstat.

Figure 3. Production growth rates in different sectors.

the trend was reversed between 2003 and 2008, with acceleration in the growth of manufacturing production. However, at the same time, growth in the extracting industry decreased further, contradicting the theory of the Dutch disease. We can conclude that although there was an outflow of labour from the manufacturing and resource sectors towards services, there was a significant expansion in manufacturing production with no sign of absolute or relative de-industrialisation. Hence we do not find sufficient evidence of symptom 4 of the Dutch disease.

In sum, from 1999 to 2007 positive factors, such as productivity catch-up, outweighed the possible effects of the Dutch disease. However, the question remains whether industrial growth might have been less pronounced had the Central Bank of Russia not limited the nominal appreciation of the ruble. The issue whether there is a potential threat of de-industrialisation if the exchange rate is left freely floating is also important for the future of Russia. This question is not easy to answer, as trading off nominal appreciation for inflation could have led to similar effects on international competitiveness.[10] To shed some light on this issue we look at the behaviour of Russian exports and imports.

Russian imports and exports and international competitiveness

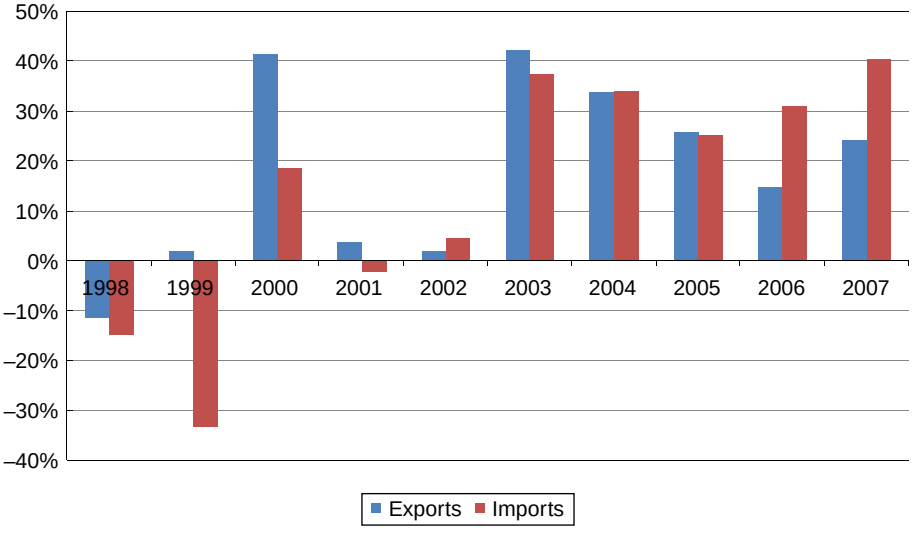
Figure 4 shows the growth rates of Russian exports and imports in 1998–2005.[11] Russian exports were rising after 1999 and imports were rising after 2000, although at a slower pace. Therefore, the trade balance was improving in spite of the appreciation of the ruble, which occurred continuously over this period.

Although the export of natural resources indeed constitutes the largest share of Russian exports (Figure 5a) and this share was increasing in 1999–2007, the export of manufacturing products was growing as well, but at a lower rate, as indicated by Figure 5b. Table 6 shows that the value of exports of all manufacturing industries except light industry did grow significantly in 2003–05.

Table 5. Real production growth rate in selected sectors (% of previous year).

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	1999–2007*
Manufacturing	−5	11	12	2	1.2	10.3	10.5	5.8	4.4	9.3	7.4
food	0.8	4	14	**8.1**	**7.1**	7	4.4	4.4	5.4	6.1	6.7
textiles	−10	12	**21**	7.7	−2.4	1.2	−4	−1.7	7.2	−0.3	4.5
wood and wood products	0.4	**18**	13	−2.4	4.1	9.7	8.6	4.4	0.4	6.2	6.9
paper products, publishing and printing	n/a	n/a	n/a	**9.6**	4	7.8	5.1	1.2	6.4	9	6.2
chemicals	−7	24	15	0.3	0.1	5.4	6.6	2.5	1.9	6.1	6.9
rubber and plastic products	n/a	n/a	n/a	1.5	0.2	5.4	**13.5**	5.5	**11.7**	**23**	**8.7**
metal products	−8	**17**	**16**	4.6	**5.2**	7.2	3.9	5.7	**8.8**	2	7.8
machinery and equipment	−7	**17**	**20**	6.5	−8.7	**19.1**	**21.1**	0	3.3	**19.3**	**10.8**
electrical, electronic and optical equipment	n/a	n/a	n/a	**8.4**	−7.7	**43.3**	**34.5**	**20.7**	−5.5	12.8	**15.2**
transport equipment	n/a	n/a	n/a	−26.4	−1	**14**	11.6	**6.1**	3.3	**15.9**	3.4
oil refining	−7	2	2	2.8	4.5	2.2	2.4	5.5	6	2.7	3.3
Oil extracting	−1	0.5	6	6.1	**7.3**	10.3	7.7	1.8	2.5	1.9	4.9
Agriculture	−13.2	4.1	7.7	7.5	1.5	1.3	3.1	2	3.6	3.3	3.8
Services	−1	7	5	1.6	3.7	6.6	8.4	**7.5**	**7.9**	7.1	6.1

Notes: *average yearly growth rate during 1999–2007.
n/a – not available due to the change in industrial classification by Rosstat in 2000.
Manufacturing includes resource sectors before 2001 but not afterwards.
Source: Rosstat.



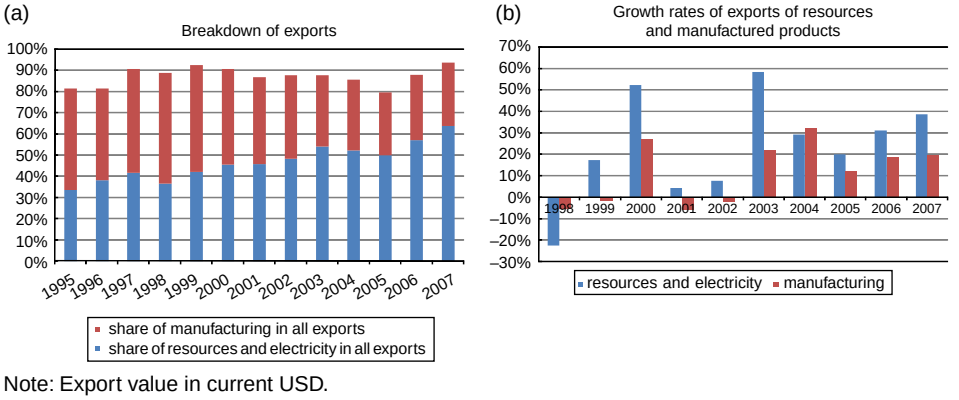
Note: Export and import value in current USD.
Source: CHELEM database, CEPII.

Figure 4. Export and import growth rates.

However, as world trade also increased over this period, it is necessary to analyse further whether Russian exports grew in line with world trade or suffered a loss of competitiveness. As shown below, whereas Russian products remained competitive on international markets, the situation appears more mixed on the domestic market, where some categories of foreign manufactured products were increasingly demanded.

Competitiveness on foreign markets

Russian manufactured products have not lost their competitiveness or attractiveness in foreign markets. As a share of world trade, Russian exports of manufactured products increased between 1999 and 2007 and reached 1.1% (Figure 6).



Note: Export value in current USD.
Source: CHELEM database, CEPII.

Figure 5. Shares and growth rates of Russian exports of resources and manufactured products.

Table 6. Export growth in manufacturing industries (% of previous year).

	1998	1999	2000	2001	2002	2003	2004	2005
Food	−5	2	12	6	19	11	14	20
Textiles	−4	−5	31	7	8	23	−2	−31
Wood and paper	−8	4	34	−1	−2	12	21	9
Chemicals	−8	2	19	0	1	25	30	17
Iron and steel	−12	−13	24	−13	11	38	75	17
Non-ferrous metals	−4	6	47	−24	−24	18	36	5
Machinery	18	−10	11	36	−8	22	−6	4
Vehicles	−8	−18	19	7	26	12	30	20
Electrical equipment	−11	−17	21	24	7	15	32	1
Electronic equipment	−16	4	2	13	−13	22	25	−5

Note: Export value in current USD.
Source: CHELEM database, CEPII.

Table 7 shows that the European Union and the CIS countries were the main markets for Russian exports of most manufactured products. Surprisingly, China was also one of the largest importers of Russian manufactured products, especially food, wood and paper, chemicals and electronic equipment, and the export of these products to China was steadily growing in spite of the appreciation of the ruble against the Chinese yuan, which was linked to the weakening US dollar.

The maintained competitiveness of Russian products on foreign markets was related to a good performance on the EU and CIS markets (Figures 7a and 7b). On the EU market, products from Russia remained competitive thanks to moderate costs of production coupled with good skills. On the CIS market, which remains naturally close to Russia, it was increased demand and the lack of production capacity within the CIS countries that made Russian products still attractive, especially since products from the European Union

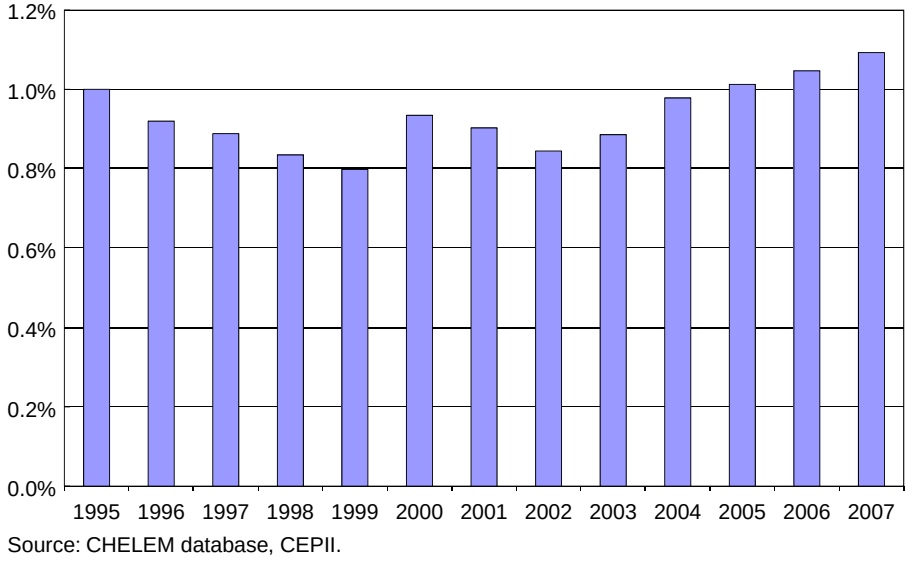
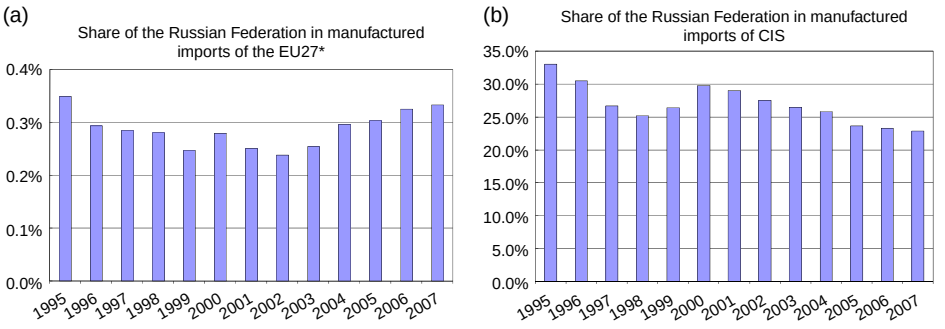


Figure 6. Share of Russian manufactured exports in world trade (%).

Table 7. Main importers of Russian manufactured products, 2005.

Food		Textiles		Wood and paper		Chemicals		Iron and steel	
EU27*	24%	EU27*	45%	EU27*	32%	EU27*	33%	EU27*	30%
China	22%	CIS	34%	CIS	26%	CIS	20%	CIS	12%
CIS	18%	USA	10%	China	15%	China	14%	China	9%
USA	3%	China	2%	USA	5%	USA	9%	USA	5%
Rest of the World	33%	Rest of the World	9%	Rest of the World	22%	Rest of the World	24%	Rest of the World	44%
Non-ferrous metals		**Machinery**		**Vehicles**		**Electrical equipment**		**Electronic equipment**	
EU27*	38%	CIS	49%	CIS	78%	CIS	62%	CIS	34%
USA	20%	EU27*	19%	EU27*	9%	EU27*	16%	EU27*	18%
China	4%	China	6%	USA	1%	China	3%	China	17%
CIS	3%	USA	3%	China	1%	USA	1%	USA	6%
Rest of the World	35%	Rest of the World	23%	Rest of the World	11%	Rest of the World	18%	Rest of the World	25%

Note: *excluding Slovenia, Malta and Cyprus.
Source: CHELEM database, CEPII.



*the ratio includes intra-EU27 trade.

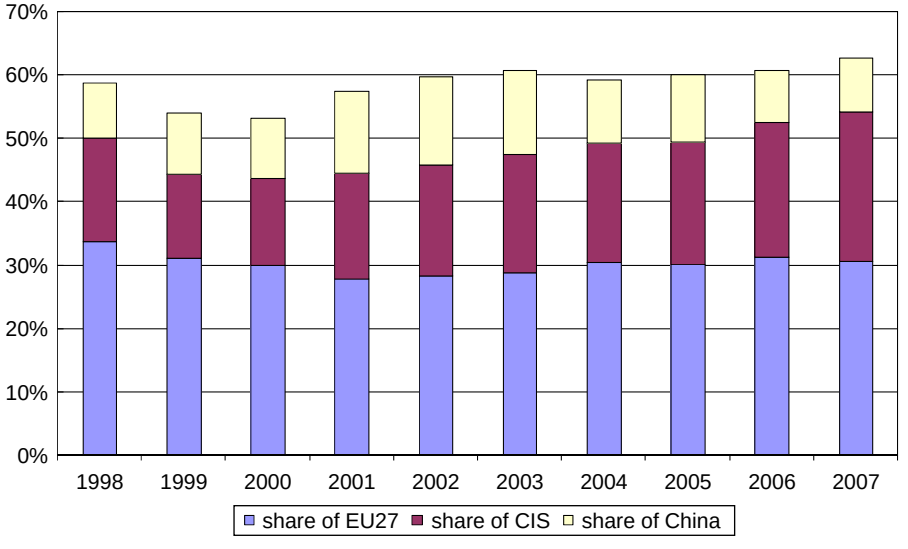
Source: CHELEM database, CEPII.

Figure 7. Share of the Russian Federation in the manufactured imports of the EU 27 and CIS countries (%).

suffered from the appreciation of the euro. Despite the increased costs of Russian manufactured products, the growth of Russian manufactured exports to the other CIS countries averaged 28.5% (in current USD) in 2003–07. Despite the apparently low share in imports of manufactured products of the EU27 countries,[12] the European Union was a significant counterpart for Russia: in 2007 the EU27 took 30% of Russian manufactured exports (Figure 8). Finally, Russia benefited from the growth of China, which imported food, wood and paper, chemicals and electronic equipment from Russia.

Competitiveness on the domestic market

Internal demand in Russia was booming in 2000–07, which supported both domestic production and imports. The share of manufactured products in total imports in Russia



Source: CHELEM database, CEPII.

Figure 8. Share of the EU27, CIS and China in exports of Russian manufactured products.

increased from 70% in 2000 to 93% in 2005. Although this is not proof of a loss of competitiveness, it is an indicator that foreign products were increasingly demanded in Russia. The main exporter to Russia was, however, the relatively expensive euro area, whose share increased from 43% in 2000 to 46% in 2005. Imports from the euro area dominated all product categories except iron, steel and non-ferrous metals, which come primarily from the CIS countries (Table 8). It should be noted that China played a growing role (its share increased from 4% in 2000 to 9% in 2006), especially in textiles and electrical and electronic equipment, which created pressure on the competitiveness of Russian products in these sectors despite the strong internal demand. In brief, the rise in imported manufactures in Russia mainly comes from sectors that either were not present in Russia or suffered from Chinese competition.

The Russian context

In sum, until the international financial crisis of 2008, the two main economic factors which supported the strong development of Russian industries were booming internal demand, supported by the rising terms of trade and increasing export revenue, and relative competitiveness of Russian products on foreign markets such as the euro area and the CIS countries despite the increasing prices of the Russian products. Furthermore, although the disorganisation of the Russian economy in the 1990s and the crisis of 1998 led to a de-industrialisation, Russia managed to revive quickly. The re-organisation led to a 'natural' recovery in the level of industrial production. These factors appear to have had a higher impact on the country's economic development than the pressure on competitiveness created by the rising terms of trade. This led to the apparent paradox that, in spite of the fact that the real exchange rate of the ruble increased in 1999–2007, industrial production in Russia did so as well, contradicting the Dutch disease hypothesis.

The institutional context and the political environment may also have played a role in these economic trends. The involvement of the government increased in some 'strategic sectors', in particular in the energy and banking and insurance sectors, and foreign investment in these 'strategic sectors' is subject to restrictions. This contributed to slower growth in the energy sector. This situation was amplified by the fact that the scope of the 'strategic sectors', as well as the rules for foreign investment in them, were not considered to be clearly defined, which led to uncertainties for foreign investors.[13] Also, in the energy sector, the recent policy of some large Russian public enterprises was to make acquisitions outside Russia, rather than to develop the extraction of natural resources within Russia (OECD 2006). These factors can partly explain the slowdown in the growth of energy extraction in recent years, despite the expected profitability.

Investment in most of the manufacturing industries, on the contrary, was not subject to such restrictions. The investment environment in these sectors improved significantly, as did the perception of it among foreign investors. Thanks to high skills in the Russian labour market, as well as the relatively moderate costs of production, Russian manufacturing industries became more attractive for investors, who used this opportunity to establish profitable production both to win a share in the booming local market and to export to other countries.

Conclusion

The fear that the Russian economy might become too dependent on the energy sector and not sufficiently diversified influenced monetary policy over the last 10 years. This policy

Table 8. Main exporters of manufactured products to Russia in 2005.

Food		Textiles		Wood and paper		Chemicals		Iron and steel	
EU27*	35%	EU27*	46%	EU27*	76%	EU27*	69%	CIS	68%
CIS	20%	China	36%	CIS	8%	CIS	7%	EU27*	22%
USA	6%	CIS	4%	China	8%	China	5%	China	2%
China	4%	USA	1%	USA	2%	USA	2%	USA	0%
Rest of the World	37%	Rest of the World	13%	Rest of the World	6%	Rest of the World	16%	Rest of the World	7%
Non-ferrous metals		**Machinery**		**Vehicles**		**Electrical equipment**		**Electronic equipment**	
CIS	48%	EU27*	69%	EU27*	44%	EU27*	67%	EU27*	72%
EU27*	28%	CIS	8%	CIS	12%	China	13%	China	12%
China	3%	USA	6%	USA	3%	CIS	10%	USA	2%
USA	1%	China	4%	China	1%	USA	1%	CIS	1%
Rest of the World	20%	Rest of the World	14%	Rest of the World	40%	Rest of the World	9%	Rest of the World	13%

Note: *excluding Malta and Cyprus.
Source: CHELEM database, CEPII.

was aimed at preventing the nominal appreciation of the ruble in order to maintain the competitiveness of industries.

In this study, using Rosstat publications and the CHELEM database, we analyse whether Russia suffered the Dutch disease in 1999–2007. We do find some symptoms of it in Russia: there was a strong real appreciation of the ruble, real wages increased, employment decreased in manufacturing industries and rose in the services sector. However, there was no sign of de-industrialisation, which contradicts the theory of the Dutch disease. Indeed, industrial production increased significantly. Furthermore, the symptoms present in Russia can be the consequences of other factors than the existence of natural resources. The appreciation of the ruble in real terms came partly from the Balassa–Samuelson effect. The quick development of services was partly due to the fact that services were neglected during the Soviet period. The outflow of labour from the manufacturing industries resulted in inflow of labour to the services sector rather than to the energy sector.

The strong growth of industrial production despite the presence of some symptoms of the Dutch disease can be explained by various factors. First, a natural catching-up process after the de-industrialisation in the 1990s can partly explain the very high productivity gains in industry, and hence why production of manufacturing industries increased despite a significant decrease in employment. Second, despite the real appreciation of the ruble, Russian products gained market share in world trade, thanks to new market opportunities in the European Union and in the other CIS countries, and to the growing Chinese demand for some specific Russian products. On the domestic market, the booming internal demand also helped to support domestic production. Third, whereas foreign investment in the 'strategic sectors', in particular, in energy and banking and insurance, were subject to restrictions, investment in most manufacturing industries was largely encouraged. Hence, thanks to the high skills and the relatively low costs of production, the manufacturing industries attracted a lot of investment (including foreign investment) and developed quickly.

From 1999 to 2007 the positive factors were sufficient to support the production of manufacturing industries, mitigating the effects of the real appreciation of the ruble. However, the international economic slowdown in 2008 led to a contraction in industrial production. In the longer term the situation may be less favourable, depending on the weights of the different factors and international competition on both domestic and foreign markets.

Regarding monetary policy, since high inflation is a growing concern, the Russian Central Bank admitted in its policy guidelines for 2008 that, although in the immediate future monetary policy would be aimed at exchange rate targeting as before, it was going to switch to inflation targeting in the medium term, allowing the exchange rate to float more freely.[14] The change in the monetary policy targets is proceeding slowly though, as Russian monetary policy is confronted with different interacting effects, accompanied by many uncertainties and difficulties in evaluating the situation in the longer term.

Acknowledgements

We are indebted to Agnès Bénassy-Quéré and Michel Fouquin for their useful comments and suggestions. We thank the CEPII (Centre d'études prospectives et d'informations internationales) for access to the CHELEM database (Comptes Harmonisés sur les Échanges et L'Économie Mondiale). Victoria Dobrynskaya is very grateful to the CEPII for their hospitality during her visit when the project started. The views expressed here are solely the responsibility of the authors and should not be interpreted as the official views of the French Ministry of Economy, Industry and Employment.

Notes

1. IMF and OECD forecasts.
2. For that, the Bank of Russia relied mainly on monetary targeting. Vdovichenko and Voronina (2004) claim that this is a consequence of underdevelopment and low efficiency of the Russian financial sector and banking system.
3. Central Bank of Russia (2007). Many papers confirm the undervaluation of the ruble, which resulted from the policy of the Central Bank of Russia.
4. The current composition of the basket is: 45% in USD, 45% in EUR and 10% in GBP.
5. The Central Bank sets targets for inflation but these targets are rarely met since the primary goal is exchange rate targeting.
6. Forecasts by the Ministry of Finance of the Russian Federation, December 2008.
7. Ploeg and Poelhekke (2008) have another interpretation of the decrease in long-run growth in countries with large natural resources. They indicate that rather than the natural resource price level or trend, it is its volatility which could harm long-run growth, because growth depends negatively on unanticipated volatility of output growth. Indeed, they find that the possible positive effects of resources on growth are often swamped by the indirect negative effect through volatility. This issue is also relevant for Russia, given the high volatility of oil prices, which has even increased recently.
8. For example, Gurvich and Sokolov (2008) estimated that approximately two-thirds of the real appreciation of the ruble against the euro was due to the Balassa–Samuelson effect.
9. OECD and authors' calculation.
10. No matter whether the nominal exchange rate of the ruble appreciates or the domestic price of Russian products goes up due to inflation, the export price will rise as $P^* = P \cdot NER$, where $P*$ is the export price in foreign currency and P is the domestic price in rubles. Therefore, it is the real exchange rate that affects the competitiveness of Russian products, not the nominal exchange rate. Hence it is possible that the policy of restricting the nominal appreciation of the ruble would not, in fact, have 'saved' the competitiveness of domestic industries.
11. In this section we use the Chelem database. According to its classification, manufactured products include food, textiles, wood and paper, chemicals, iron and steel, non-ferrous metals, machinery, vehicles, electrical equipment and electronic equipment. Hence, there are some differences with the data presented in the previous sections, where we use the Rosstat data.
12. The share is calculated including intra-EU27 trade, which makes the share of Russian products appear very low.
13. In 2008 a Federal law (N°57 FZ – 29.05.2008) came into force which aimed at clarifying the scope of the strategic sectors and the rules for foreign investment in them.
14. 'In 2008 the Bank of Russia will continue to pursue the monetary policy while maintaining the managed floating exchange rate regime. Its exchange rate policy will aim to mitigate abrupt fluctuations in the exchange rate that are not caused by fundamental economic factors and take into account the necessity of curbing inflation and keeping domestic producer prices competitive. In the medium term, the Bank of Russia will switch to a more flexible exchange rate setting to facilitate the fulfillment of the monetary policy quantitative targets to maintain price stability by controlling the price of money in the economy mainly by using interest rate policy instruments of the monetary authorities' (Central Bank of Russia 2007).

References

CBR, 2007. *Guidelines for the single state monetary policy in 2008*. Moscow, Central Bank of Russia. Available from: http://www.cbr.ru/eng/today/publications_reports/on_2008e.pdf.

Dobrynskaya, V., 2008. The monetary and exchange rate policy of the Central Bank of Russia under asymmetrical price rigidity. *Journal of innovation economics*, issue 'The Economic Performance of Russia', 1, 29–62.

Doppelhofer, G., Miller, R. and Sala-i-Martin, X., 2004. Determinants of long-term growth: a Bayesian averaging of classical estimates (BACE) approach. *American economic review*, 94 (4), 813–835.

Gurvich, E. and Sokolov, V., 2008. Estimation of the contribution of the Balassa–Samuelson effect to ruble real exchange rate dynamics (in Russian). Presented at IX International Conference *Economic modernization and globalization*, Moscow.

International Monetary Fund, 2003. *Russian Federation: selected issues*. *Country report no. 03/146*. Washington, DC: IMF.

OECD, 2006. *Economic survey of the Russian Federation*. Paris: OECD.

Oomes, N. and Kalcheva, K., 2007. Diagnosing Dutch disease: does Russia have the symptoms? *IMF working paper #07/102*, April.

Ploeg, F. van der and Poelhekke, S., 2008. Volatility harms growth – new perspectives on the natural resource curse. Mimeo.

Sala-i-Martin, X., 1997. I just run two million regressions. *American economic review*, Papers and Proceedings, May.

Sachs, J. and Warner, A., 1997. Natural resource abundance and economic growth. *NBER working paper 5398*, Cambridge, MA.

Sosunov, K. and Zamulin, O., 2006. Can oil prices explain the real appreciation of the Russian ruble in 1998–2005? *CEFIR/NES working paper #83*.

Vdovichenko, A. and Voronina, V., 2004. Monetary policy rules and their application in Russia. *EERC working paper series No 04/09*, Moscow.

World Bank, 2003. *International public administration reform implications for the Russian Federation*. Washington, DC: World Bank.

World Bank, 2006. *Institutional reform in Russia: moving from design to implementation in a multi-level governance context, Report number 35576-RU*. Washington, DC: World Bank.