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The General Rate of Profit in a New Market Economy: Conceptual Issues and Estimates

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Abstract

Using national income data, we estimate levels and identify trends in the general rate of return in Russia from 1994 to 2002. Endogenous distributional and efficiency determinants of profitability are discussed in the Marxian analytical framework. We find that in spite of the major decline in output, the average rate of profit in Russia during the transition period was relatively high. This is primarily explained by the high level of the rate of surplus value (rate of exploitation), which was estimated to be 1.5-2 times as high as comparable estimates for the United States. In view of problems with data for profits and capital in Russia, we consider our estimates as only tentative indicators of the underlying trends and levels of profitability in the Russian economy.

JEL classification: P16; E11; J30

Keywords: transition economies; profit rates; capital; investment; Russia

I. Introduction

In the past decade, much has been said and written about Russia's return to the family of capitalist economies (for recent reviews of literature, see, for example, Roland 2000, 2002; Granville and Oppenheimer 2001; Svejnar 2002; World Bank 2002). Surprisingly little research, however, has been done on this topic by Marxist scholars. This omission might par-

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tially be explained by the disappointment experienced by many of them with the demise of the communist experiment and the lack of desire to sort out the messy picture that appeared in its place. Some Marxist economists went as far as declaring the postreform Russia a "non-capitalist" country (Kotz 2001). We think, however, that such views are mistaken. After ten years of reforms, the Russian transition to capitalism is in its advanced stage and presents a fascinating opportunity for analysis in the Marxian intellectual framework.

This article aims to investigate the levels, trends, and determinants of the general rate of profit in Russia. The behavior of the rate of profit is one of the central issues of Marx's analysis of capitalist accumulation. Through its link to the division of national income, the general rate of profit reflects the level of exploitation of the working class (Marx 1967; Menshikov 1999). Through its link to the organic and technical composition of capital and to the capital-output ratio, however, it reflects the technological level and efficiency of the national economy (Weisskopf 1979; Wolff 1979, 2001; Moseley 1990; Duménil and Lévy 1993, 2002a, 2002b).

The unraveling of the communist experiment in Russia poses a set of important questions regarding capital, labor, and their interaction. Is the general rate of return in the Russian economy high or low? Are there discernible trends in profitability in Russia since the start of its market transition? Is the rate of surplus value in Russia higher or lower than in mature market economies, such as the United States? In this article, we will try to give tentative answers to these questions.

Anecdotal information and stylized facts on profits, incomes, and capital formation in the postreform Russia are contradictory. Throughout the past decade, the media and academics in both Russia and the West reported extensively on new Russian capitalists creating enormous fortunes with the help of foreign advisors and corrupt officials (Boycko, Shleifer, and Vishny 1996; Blasi, Kroumova, and Kruse 1997; Hellman 1998; Ellman 2000; Goldman 2003). It is, of course, true that privatization of the Russian economy did massively enrich managers, Communist Party elite, and other well-placed individuals. This does not, however, relate directly to the questions of profitability. Although hardly justifiable on equity grounds, these fortunes mostly came from the redistribution of existing assets rather than from capitalist accumulation.

Throughout the 1990s, we have also heard much about the suffering of the Russian working class. A destitute Russian worker, not being paid his wages for months, has become one of the symbols of the "wild capitalism" of Russia. There is no doubt that during the course of the 1990s, the Russian working class suffered considerable losses. Official statistics estimate that between 1991 and 2000, average real labor compensation dropped by more than 50 percent, whereas unemployment levels doubled (see Table 1). Numerous other data document declines in consumption, health, longevity, and other measures of national welfare. Indirect evidence of the deterioration in the economic status of the working class is the sharp increase of income and wealth inequality in Russia, as reported in many studies (Aghion and Commander 1999; Fan, Overland, and Spagat 1999; Ferreira 1999; Alexeev 1999; Rosser, Rosser, and Ahmed 2000). It is not clear, however, what part of the income loss of the working population in Russia can be blamed directly on profit taking by capitalists, because in the same period real GDP in Russia dropped by some 40 percent and labor productivity by more than 20 percent (State Committee for Statistics 2001).

An estimation of capital in Russia can be as challenging as the evaluation of profits. On one hand, from the former USSR, Russia has inherited an enormous capital stock, which in-

Table I
Russia: Key Macroeconomic Indicators, 1992-2002

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
GDP (% of previous year)	85.5	91.3	87.3	95.9	96.4	101.4	94.7	106.4	110.0	105.0	104.3
Unemployment (%)	5.1	5.9	8.2	9.5	9.8	11.8	13.2	12.6	9.8	8.9	8.6
Real wage index (1991 = 100)	67.30	67.57	62.23	44.81	47.67	49.91	43.28	33.76	41.18	49.37	57.52
Inflation (year on year, GDP deflator, times)	26.1	9.9	4.1	2.3	1.4	1.11	1.84	1.36	1.20	1.19	1.15
Investment in fixed assets (% of previous year)	60	77	64	90	82	95	88	105	117	110	103

Source: State Committee for Statistics (2001: 134, 279, 56; 2003: 281); and Statistics of Russia (2003).

cluded advanced scientific and research facilities. On the other hand, with the switch from central planning to the market, a significant part of this capital stock has become economically useless. Government statistics, however, do not separate this “dead” capital from the “live” part that could be used in a market economy environment. The situation is further aggravated by the dramatic decline in capital formation and by massive capital flight. During the 1990s, an estimated \$15-20 billion, or between one-fifth and one-third of national savings, were leaving Russia every year, whereas the inflows of foreign investment were minuscule (Popov 1999; Buiter 2000; Lushin and Oppenheimer 2001; Sapir 2001).¹ The overall level of investment in the Russian economy continued shrinking until 1999 (see table 1).

Ideally, the study of profitability in a transition economy should include the comparison of pre- and postreform periods. For Russia, this would mean comparing the contemporary period with the Soviet period of 1917 to 1991. Prior to privatization, however, Russia did not have a class of capital owners. The role of capitalists could, of course, be assigned to the ruling bureaucracy, or *nomenclature* (see Djilas [1957] 1982; Voslensky 1992). Although justifiable on many grounds, this premise would require a large number of additional assumptions to overcome associated methodological and statistical problems, and should be the subject of a separate study.²

In this article, we will limit ourselves to a narrower task: estimating an empirical rate of profit in the Russian economy for the later part of the period of market transition, 1994-2002. To study the determinants of profitability, we will separate it into its distributional (profit share) and efficiency (output-capital ratio) components, which is a standard

1. By 2001, the stock of foreign investment in Russia on a per capita basis was 10-20 times lower than in Poland, Hungary, and the Czech Republic—the leaders in market transition (European Bank for Reconstruction and Development [EBRD] 2001).

2. In most of the mainstream studies of the Soviet economy using standard production function and growth models, shares of labor and capital are simply assumed. Studies in which this assumption is relaxed maintain that between the 1950s and late 1980s, capital efficiency and share of capital income in the Soviet GDP have been in secular decline (for a discussion, see Easterly and Fisher 1995).

technique in Marxian analysis (Weisskopf 1979; Moseley 1990; Wolff 2001; Duménil and Lévy 2002b).

The article consists of five sections. Following this introduction, section 2 discusses the analytical and methodological issues of calculating the rate of profit in a transition economy. Section 3 evaluates data on profits and capital, and provides estimations of rates of profit in the Russian economy and industry. Section 4 discusses the main factors of profitability, including the rate of exploitation. Section 5 presents conclusions and suggestions for further research.

2. Analytical Framework

Estimating the rate of return in a transition economy raises both methodological and data-related problems. The very first methodological problem that needs to be addressed is the “legitimacy” of considering the Russian economy as capitalist. More than ten years into market transition, this question is still being debated in Marxist literature. Authors questioning the capitalist nature of the Russian economy point out such facts as the origination of a large part of incomes there from the redistribution of state assets and the export of raw materials, the unusually high incidence of barter, and the reliance of many Russians on the “survival economy” of petty production and trade (Kotz 2001). Other authors, although admitting the existence of these features of the Russian economy, argue that by themselves they do not negate the domination of private ownership, the production of surplus value, and the exploitation of the working class in modern-day Russia (Menshikov 1999).³ In our view, the latter approach is more realistic. The current Russian economic system is indeed far from “classic” capitalism. It does, however, manifest the key attributes of capitalism (generalized commodity production, the wage-labor relationship, and production for profit) and therefore can be considered essentially capitalist in its nature.

Those who believe that the contemporary Russian economy is capitalist still have to answer the question of when exactly it made a switch to capitalism. Did it happen during the period of hidden privatization under Gorbachev, at the time of Yeltsin’s shock therapy reforms, or at some other point in time? The exact timing of the systemic change on such a grandiose scale as happened in Russia in the past two decades is hardly possible. One can, however, offer a tentative answer to this question by focusing on such principal criteria of capitalist transition as the share of the private sector in GDP. In Russia, this share, negligible under Gorbachev and in the early Yeltsin years, reached the break-even level of 50 percent in 1994 in the wake of the first wave of massive privatization (World Bank 2002: 6). Characteristically, around the same period, many other indicators of the “market transition,” such as price and fiscal liberalization and the opening of foreign trade, have also reached the critical “inflection points.”⁴ Thus, if one is to choose the nominal date of Russia’s transition to capitalism, the period of 1994–1995 seems to be a reasonable candidate.

3. “Russian capitalism of the 1990s is largely an outgrowth of the illegal shadow economy of the Communist past, combined with the totally new system of state-monopoly capitalism. This system has expropriated the assets of the socialist state and thrived on substantial surplus value, redistributed in recent years through government channels” (Menshikov 1999: 86).

4. As reported in annual “progress reports” of the EBRD.

Other methodological problems for calculating the general rate of profit are not specific to transition economies but rather reflect general dilemmas of matching Marxian concepts with the real-economy indicators. Estimates of the general rate of profit in Marxian economic literature are usually based on either national income accounts or input-output tables. The first of these two methods is used, for example, in Weisskopf (1979), Moseley (1988), Wolff (2001), and Duménil and Lévy (2002b). The second can be found in Wolff (1975, 1979), Ochoa (1992), and Araquém da Silva and Rosinger (1992). In this article, we will use the national income-based approach because it calls for fewer assumptions and allows using a wider selection of data.⁵

To analyze determinants of profitability, we will use the decomposition analysis used in many Marxian and mainstream studies of the rate of return (see, for example, Weisskopf 1979; Hill 1979; Moseley and Wolff 1992; Wolff 2001; Duménil and Lévy 2002b).

Let us define profitability as

$$r = \Pi/K \quad (1)$$

where Π is income on capital (profits) and K is a measure of capital stock, all expressed in current prices. It can then be decomposed into

$$r = (\Pi/Y)(Y/K) \quad (2)$$

where Y is nominal GDP.

The Π/Y component of (2)—the share of profits in GDP—indirectly reflects the intensity of labor exploitation. Component Y/K , the output-capital ratio, in its turn reflects production efficiency.

Data for profits and GDP are included in the Russian national income and product accounts that are now compiled by using the same principles as in other countries, including the United States. Measurement of capital, however, raises major methodological problems. As mentioned earlier, Russian capital accounting is largely blind to the depreciation of Soviet-era capital stock that resulted from the market transition. A significant but unknown part of this capital stock that remains on the books of Russian enterprises is no longer involved in the production process. The degree of obsolescence of the capital stock in Russia is quite high. Between 1990 and 2000, the average age of industrial equipment in Russia increased from eleven to nineteen years (State Committee for Statistics 2001: 340–50). Although nominal officially established rates of depreciation in Russia are very low, the real rate of depreciation of capital stock in the second half of the 1990s was estimated to be close to 10 percent annually (Hall and Basdevant 2002). Estimates of the portion of the overall capital stock “killed off” by the market transition vary. Some economists consider it to be no more than 15–25 percent (McKinsey Global Institute 1999); others believe that it may be as high as 50 percent (Kushnirsky 2001).

5. The focus of this article is estimation of the empirical rates of return. Thus, we are not addressing here the issue of differences between the theoretical and empirical definitions of profitability. For a discussion of these issues, see, for example, Bowles, Gordon, and Weisskopf (1986); Izumov (1986, 1988); Laibman (1996); and Duménil and Lévy (2002a).

It is clear that including the dead portion of capital stock in calculations of rate of return introduces a major bias in measurement of the general rate of profit. One way of overcoming this problem would be to make an assumption about the percentage of live, or effective, capital in the total stock. For example, a study of capital formation in Hungary assumes that the transition to the market there effectively eliminated 33.3 percent of the stock of preexisting equipment and 12.5 percent of the stock of structures (Darvas and Simon 2000). Another, and in our view more productive, alternative is to complement the estimates of capital stocks with estimates of the movement of the capacity utilization ratio. In the transition economy environment, this indicator reflects, however indirectly, the share of capital stock that remains usable after the market transition and the switch to world market prices.

Adding capacity utilization modifies (2) to

$$r = (\Pi/Y)(Y/K_u)(K_u/K) \quad (3)$$

where K_u refers to the utilized capital stock and K_u/K is the capacity utilization ratio.

Based on (3), we can interpret profitability as an outcome of interaction between distributional factors, reflected by the profit share, and efficiency factors, reflected by output-capital and capacity utilization ratios.

3. Data Availability and Estimates of Profitability

Most transition countries, including Russia, now publish their national income and product accounts, and other statistics, using international standards. The reliability of these data varies, however. Measurement of GDP and other economic variables in transition economies is notoriously imprecise. Generally, there is a bias toward underreporting (Koen 1996; Lacko 2000). In particular, profits in these countries are systematically underreported due to tax evasion and the presence of a significant underground economy (Jackman 1998; Clarke and Borisov 1999; Lacko 2000; Schnider and Enste 2000; EBRD 2000; Filer and Hanousek 2002).⁶ The official data on capital formation are arguably more accurate than data for profits because underreporting here is more difficult and incentives for it are weaker.

Selecting national income accounts for profitability estimation still leaves open a choice of specific measures of profits and capital to be used for actual calculations.⁷ In our study, we use broad measures of capital income that include gross corporate profits before taxes and one-half of proprietors' income termed in the Russian national statistics as "mixed profits" (State Committee for Statistics 2001). Much like in the U.S. national accounts, in Russian data these profits include compensation for work (proprietors' wages),

6. "[I]nadequate price deflators, large shadow economies and inconsistencies in the underlying data concepts create serious distortions in the official data and complicate cross-country comparisons" (EBRD 2000: 49).

7. In a study of macroeconomic profitability in the United States, Bowles, Gordon, and Weisskopf (1986: 135) listed six questions regarding such choices: (1) to use net or gross measures of capital income and capital stock, (2) to evaluate income before or after taxes, (3) to adjust the data for the effects of inflation or not, (4) to include or not to include net interest payments in capital income, (5) to include or not to include inventories along with fixed capital stock, and (6) to measure fixed capital in terms of its historical or replacement cost.

which should be separated from profits of proprietorships as business entities. In the existing literature, methods of allocating proprietor's incomes to profits range from total exclusion (Moseley 2000) to total inclusion (Menshikov 1999). Following similar calculations recently made for the United States (Wolff 2001), we have chosen the middle ground.⁸ In the denominator, we use gross fixed capital stock at current replacement value. (For a description of data, see the appendix.)

In addition to the general rate of return for all of the economy, we computed the parallel set of estimates of profitability in the industrial sector. In Russian statistics, *industry* consists of capital-intensive branches of the economy: mining, manufacturing, and utilities. Industry value added comprises about 30 percent of Russian GDP. Due to considerable entry barriers, small business activity in Russian industry is limited, and it can be assumed that mixed profits in this sector are negligible.

The overriding concern in calculating profitability in Russia is inflation. From its Soviet period, Russia inherited the old system of capital formation reporting based on historical cost accounting. During the high inflation of the early 1990s, this led to unrealistically low estimates of capital stock compared to other macroeconomic variables, such as profits. The distortions were particularly large during the first two years of transition (1992-1993), when Russia experienced hyperinflation.

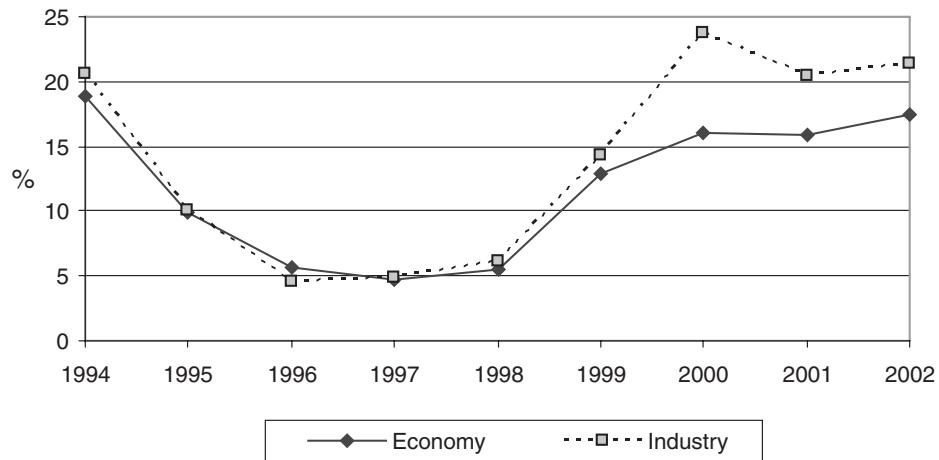
After 1993, inflation subsided. At the same time, periodic official reevaluations of fixed assets using the current replacement cost approach became annual and presumably more accurate.

The rate of return on fixed capital stock for the Russian economy and its industrial sector for the period of 1994-2002 is presented in Figure 1. It can be seen that the dynamics of profitability in this period consist of two trends: downward from 1994 to 1996 and upward from 1998 to 2002. For the economy as a whole, the rate of profit declined between 1994 and 1996 from 18.8 percent to 4.8 percent, then recovered to 16-17 percent in 2000-2002. For industry, the magnitude of fluctuation was somewhat larger but the trends were the same. From the high of 20.6 percent in 1994, profitability fell here to lower than 5.0 percent in 1996-1997 and then recovered to 20-25 percent in 2000-2002. The average rate of profit for the economy for the 1994-2002 period was 11.6 percent, whereas for industry it was 13.8 percent.⁹

In view of problems with data for profits and capital, outlined above, great caution is in order when interpreting the resulting rates of profit. These estimates should be considered as only tentative indicators of the underlying trends and levels of profitability in the Russian economy.

8. Still another method of separating profits from labor incomes of proprietorships calls for the direct estimation of the wage component of the value added created in this sector (see, for example, Duménil and Lévy 2002b). For Russia, however, this method is hard to implement due to the unreliability of statistics for average wages and salaries.

9. Using somewhat different methodology, Lo (1999) calculated the rate of return on capital in Chinese industry since the start of the market transition (1980-1996). The estimated average level of the rate of return in China (around 15 percent) seems to be comparable to that in Russia. In China, however, profitability demonstrated a clear downward trend.

**Figure 1.**

Rate of Return on Capital Stock in the Russian Economy and Industry, 1994-2002 (%)

Source: State Committee for Statistics (2001, 2002, 2003); and Statistics of Russia (2003).

4. Determinants of Profitability

Following the analytical approach previously discussed, we decompose the rate of return on capital (Π/K) into its underlying determinants: profit share in GDP (Π/Y), output-utilized capital ratio (Y/K_u), and capacity utilization ratio (K_u/K).

Figure 2 represents the share of profits in Russian GDP and value added of industry. One can see that trends of profit shares during the observed period generally correspond to the trends of the rates of return on capital but are less pronounced. Profit share in the economy trended down in 1994-1997 from 35-37 percent to 27 percent and trended up in 1997-2002 from 27 percent to 34-35 percent. Trends in the profit share in value added in industry followed those in all of the economy. The profit share there declined from a high of about 52.6 percent in 1994 to the minimum of 34.3 percent in 1997, then bounced back to 41-42 percent in 2001-2002 (see Figure 2).

Profit share can be represented as a function of productivity, real wages, and price deflators for consumer goods and GDP. From

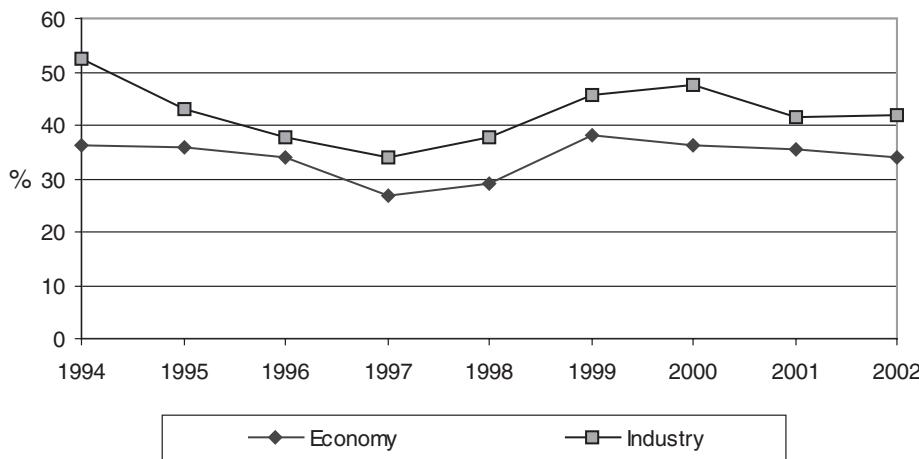
$$\Pi/Y = (Y - wL)/Y \quad (4)$$

follows

$$\Pi/Y = 1 - (w_r P_w / y P_y) \quad (5)$$

where w is nominal wage rate, w_r is real wage rate, L is employment, P_w is consumer price index, y is productivity, and P_y is the GDP deflator.

For analytical purposes, we can further distinguish the price-induced and "real" determinants of the profit share. Denoting the price ratio P_w/P_y as pricing factor P and the ratio of average real wages to productivity w_r/y as the "real exploitation" factor ε , we obtain

**Figure 2.**

Share of Profits in the Russian GDP and in the Value Added of Industry, 1994-2002 (%)

Source: State Committee for Statistics (2001, 2002, 2003); and Statistics of Russia (2003).

$$\Pi/Y = 1 - P\varepsilon \quad (6)$$

The real exploitation factor, ε , can now be compared to the traditional rate of surplus value (rate of exploitation) indicator s , defined as a ratio of all profits to all wages:

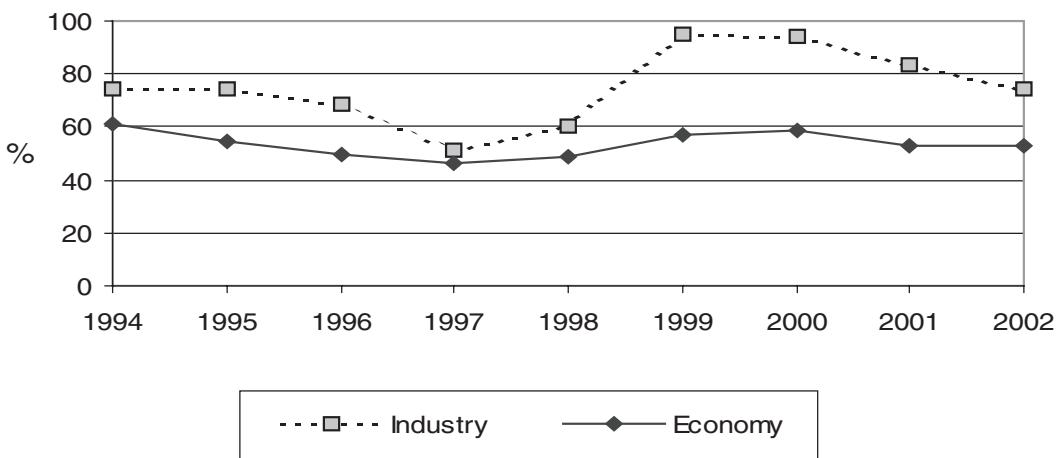
$$s = \Pi/W \quad (7)$$

where s/σ is the rate of surplus value, Π is defined as above, and W is the annual labor compensation.

The relatively strong position of capital owners in Russia is confirmed by the high level of profit share and rate of surplus value there, compared to the United States. The average level of profit share for all of the Russian economy for 1994-2002 was 34.2 percent, whereas for industry it was 42.6 percent. In the U.S. nonfinancial corporate sector of the economy, in the same period, the similarly calculated profit share averaged 24.8 percent. (For sources of data used for the U.S. estimates, see the appendix.) The difference in the rates of surplus value as defined in (7) was of similar magnitude. For the 1994-2002 period, this indicator in Russia averaged 58.9 percent for the economy and 90.3 percent for industry (see figure 3).¹⁰ For the United States, the similarly calculated indicator of the rate of surplus value for 1994-2002 was 37.9 percent. Thus, compared to the United States, the rate of exploitation in Russia in this period was 1.5-2 times higher.

Importantly, the rate of exploitation in Russia was not only high but also increasing in real terms. Based on (5), other things being equal, the profit share goes up when increases in

10. In a study based on input-output statistics for 1995-1999, Menshikov (1999) found the average nominal rate of surplus value in the Russian economy to be around 80 percent. This higher estimate is primarily the result of the different treatment of mixed profits. In Menshikov's calculation, all of them are included in profits and none in labor incomes. Menshikov also excluded from labor incomes payments in kind and other forms of "hidden labor compensation" (Menshikov 1999: 87-89).

**Figure 3.**

Rate of Surplus Value in the Russian Economy and Industry, 1994-2002 (%)

Source: State Committee for Statistics (2001, 2002, 2003); and Statistics of Russia (2003).

the real wage are smaller than the increase in productivity or when declines in real wage are larger than the decline in productivity. Potential increases in profit share due to real wage productivity trade-offs can, however, be moderated, eliminated, or reversed when consumer prices increase faster than general inflation (Weisskopf 1979; Moseley 1990; Moseley and Wolff 1992).

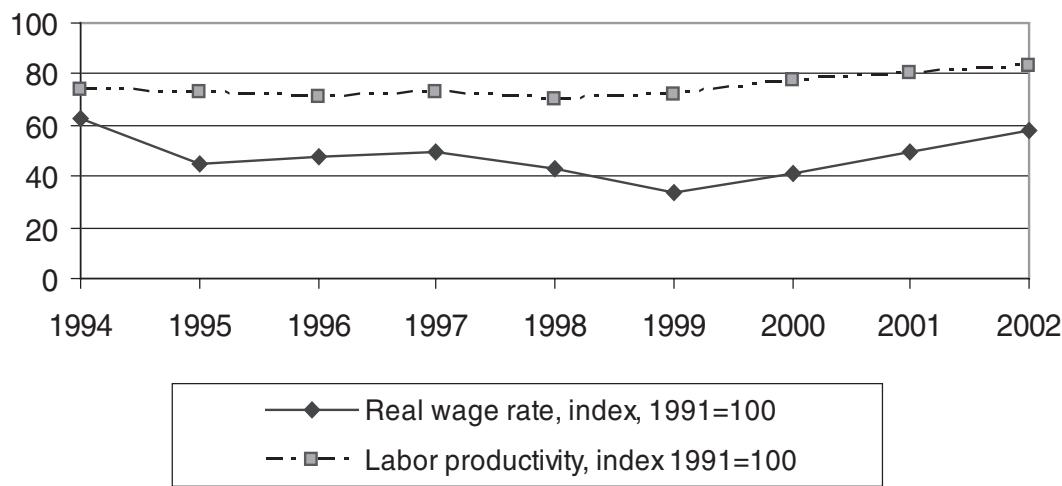
Data in figure 4 present trends in real wage and productivity in the Russian economy. It can be seen that during the whole reform period, the productivity of Russian workers has been generally falling more slowly and increasing faster than the real wage. As a result, the gap between productivity and the real wage has grown in favor of capital owners. By 2002, the level of the real wage indexed to 1991 was just 57.2 percent, whereas productivity was 83.2 percent.¹¹

Recall that during the 1994-2002 period, profit share in the economy stayed generally flat at 34-36 percent of GDP. Based on (6) and (7), it means that consumer prices in this period grew much faster than overall inflation. The relative stability of the profit share in the environment of accelerated consumer price inflation means that Russian workers in the 1990s were collectively too weak to protect their real wages. Capital owners were able to impose on workers a higher real rate of exploitation and thus could protect their profit share from downward pressure induced by faster growth of consumer prices.¹²

The gains of capital owners were particularly large in 1998-2000 in the wake of the Russian financial crisis of August 1998. As a result of the steep depreciation of the ruble, the U.S. dollar equivalent of the average wage in Russia dropped from \$164 to \$108 a month and stayed lower than \$100 for the next two years (State Committee for Statistics

11. The dynamics of productivity and the real wage in industry, not shown here, were similar to that of the economy.

12. When a similar price gap developed in the United States in the 1960s and 1970s, labor there was able to defend its real wage by keeping pay raises in line with the CPI. That pushed up wage share in current prices in the GDP, resulting in the famous "profit squeeze" of the 1970s (Weisskopf 1979; Wolff 1986).

**Figure 4.**

Real Wage Rate and Productivity in the Russian Economy, Indexes (1991 = 100)

Source: State Committee for Statistics (2001, 2002, 2003); and Statistics of Russia (2003).

2003: 660). This happened in spite of the resumption of growth and the rebound of productivity. The high level of the rate of exploitation of Russian workers is also confirmed by such indicators as level of wage arrears, food consumption, hours of work, and mortality.

The analysis of the reasons behind the weak bargaining position of Russian workers vis-à-vis capital owners is beyond the scope of this article. Likely explanations include weak trade unions, high unemployment, and low geographical mobility of labor, which continue to lock Russian workers into stagnating regional labor markets and depress their wages (Jackman 1998; McKinsey Global Institute 1999; Guriev 2001).

It is clear that the high level of the rate of exploitation directly contributes to the rapid increase in income inequality in Russia in the 1990s, reflected in many studies of transition.¹³ Table 2 presents some of the relevant statistics.

The data indicate that since the start of transition, the level of inequality, as measured by the Gini coefficient, has grown 1.5 times from 0.26 to 0.40. At the same time, the share of the top quintile of population in all incomes went up from 31 percent to 46 percent, whereas the share of the bottom quintile went down from 12 percent to 6 percent (see Table 2). The official data possibly underestimate the real extent of inequality. The United Nations data based on consumption indicate that as of 1998, the Gini coefficient in Russia was 0.49 and the share of the top quintile was 54 percent, 12.2 times the share of the bottom quintile, reflecting an income gap larger than, for example, in the United States (Human Development Report 2001: 182–83).

The dynamics of the other determinants of the rate of return, the measured output-capital ratio (Y/K), the output-utilized capital ratio (Y/K_u), and the capacity utilization rate (K_u/K) in the Russian economy are presented in Figure 5. (For a description of sources used

13. See Aghion and Commander (1999); Fan, Overland, and Spagat (1999); Ferreira (1999); and Rosser, Rosser, and Ahmed (2000).

Table 2
Distribution of Income in Russia, 1991-2002

	1991	1992	1995	1997	1998	1999	2000	2001	2002
Gini coefficient	0.260	0.289	0.387	0.390	0.394	0.400	0.395	0.398	0.398
Income distribution (%)									
Top quintile	30.7	38.3	46.3	46.2	47.0	47.7	47.7	45.8	45.8
2nd quintile	22.8	26.5	21.7	22.3	21.5	21.1	21.1	22.8	22.8
3rd quintile	18.8	17.6	15.2	15.2	15.0	14.8	15.1	15.4	15.4
4th quintile	15.8	11.6	10.7	10.5	10.5	10.4	10.4	10.4	10.4
Bottom quintile	11.9	6.0	6.1	5.8	6.0	6.0	5.8	5.6	5.6

Source: State Committee for Statistics (2001: 187; 2003: 185).

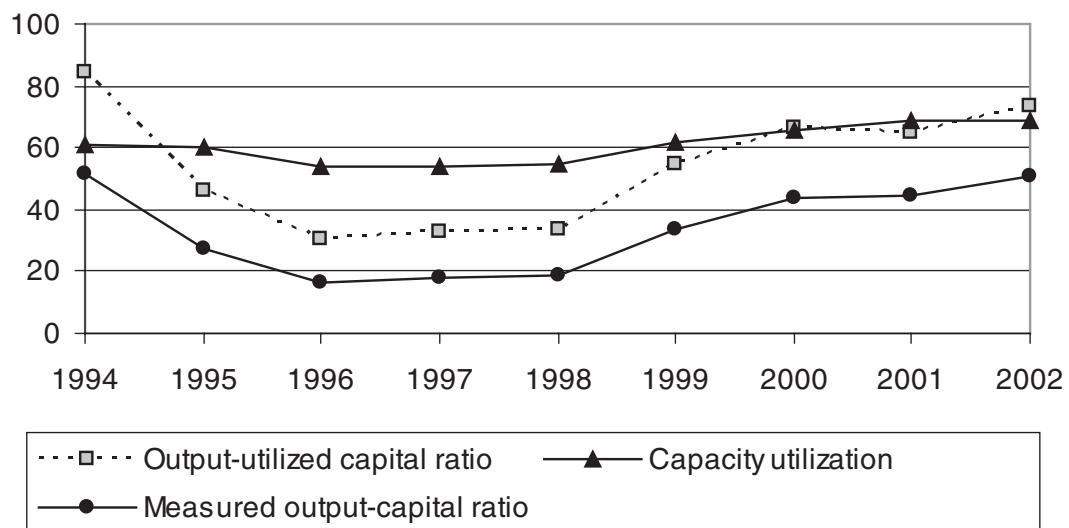
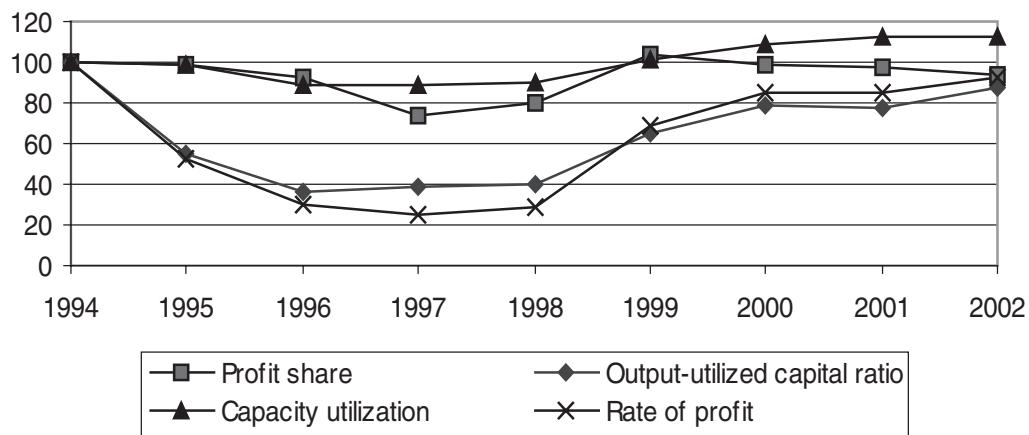


Figure 5.
Output-Capital Ratio and Capacity Utilization Rate in the Russian Economy, 1994-2002 (%)
Source: State Committee for Statistics (2001, 2002, 2003); Statistics of Russia (2003); and Russian Academy of Sciences (2003).

to compute these variables, see the appendix.) It can be seen that the measured output-capital ratio Y/K declined dramatically in 1994-1996 but largely recovered in 1998-2002. For the most part, fluctuations of this indicator followed those of the output-utilized capital ratio Y/K_u , which also dropped sharply in 1994-1996 and recovered in 1998-2002.¹⁴ Fluctuations in the capacity utilization rate contributed to the overall drop of the Y/K ratio but were not as sharp as those of Y/K_u . Due to the shortness of the studied period, it is clear that the wide swings in the output-capital ratio cannot be related to fundamental changes in the

14. The dynamics of output-capital ratio in industry, not presented here, were similar to those in the economy.

**Figure 6.**

Determinants of the Rate of Profit in the Russian Economy, Indexes, 1994-2002 (1994 = 100)

Source: State Committee for Statistics (2001, 2002, 2003); and Statistics of Russia (2003).

quality of capital stock. It is equally clear, however, that they cannot be fully explained by the change in capacity utilization alone.

The average level of the measured output-capital ratio for the period 1994-2002 was 0.34 for the whole economy and 0.32 for the industrial sector. This level corresponds to the capital-output ratio of 2.9-3.1, which is not much different from the estimates of capital intensity of production at the end of the Soviet period (Easterly and Fisher 1995).

In figure 6, all three determinants of the rate of profit (profit share, output-utilized capital ratio and capacity utilization rate), and rate of profit are put together in indexed form. It can be seen that during the 1994-2002 period, fluctuations of the rate of profit in the Russian economy closely followed those of the output-utilized capital ratio, whereas fluctuations of the profit share and capacity utilization rate were relatively less pronounced. A similar picture emerges in the decomposition of the rate of profit in industry. Thus, although the high *level* of profitability in Russia was largely determined by the high level of profit shares (and the underlying high level of the rate of surplus value), profitability *trends* resulted mostly from the fluctuations in the output-capital ratio. Of course, the trends in question are medium term. The period of observation (fewer than ten years) is too short to talk about long-term trends in profitability in the Marxian sense.

5. Conclusions

The transition of formerly socialist economies back to capitalism presents challenging questions for economists of all denominations, including Marxists. One of these questions is the behavior of the general rate of profit and its determinants, in particular the rate of surplus value. In this article, using Russian national account statistics, we analyzed trends and levels of profitability in the Russian economy during the later period of market transition, 1994-2002. To study the determinants of profitability, we decomposed the rate of return into its income distribution-related and production efficiency-related factors represented

by the share of profits in GDP, by the output-capital ratio and by the capacity utilization rate. Profitability and other relevant variables were computed for all of the Russian economy and, separately, for the industrial sector.

In view of problems with data for profits and capital in Russia, great caution is in order when interpreting the resulting rates of return. We consider our estimates as only tentative indicators of the underlying trends and levels of profitability in the Russian economy.

During the period of study, profitability experienced two trends. It declined between 1994 and 1997, and rose from 1998 to 2002. These trends in profitability resulted primarily from changes in the output-capital ratio because profit shares stayed essentially flat during the period.

Considering that throughout most of the 1990s, the Russian economy was in a depression, the average levels of the rate of profit in 1994-2002 (11.6 percent for the economy and 13.8 percent for industry) were found to be surprisingly high. The main reason behind this was a very high share of profits in GDP; between 1994-2002, profit share averaged 34.2 percent of GDP. At the same time, the average measured output-capital ratio was found to be relatively low and not much different from that of the late Soviet period.

Analyzing determinants of the profit share in Russia, we decomposed it into the “real exploitation” component, as reflected by the ratio of productivity to real wage and relative price component, as measured by the ratio of consumer price index and GDP deflator. It turned out that the relative stability of the profit shares in Russia in 1994-2002 masked the gradual increase of real exploitation as consumer prices grew faster than overall inflation.

The widening gap between productivity and real wages confirms that the new Russian capitalists have indeed been taking advantage of the weak bargaining position of labor. There is no doubt that the oversized share of profits in GDP directly contributed to the rapid growth of income inequality, reported in many studies of the Russian transition.

The inability of the Russian workers to defend their real wages is explained in part by the depth of the transformational recession and the massive unemployment it caused. As the Russian economy recovers, this factor will likely play less importance. It can be expected that, much like in mature market economies, sustained recovery in Russia will help improve the relative bargaining position of labor. Scarcity of capital and structural deficiencies in the Russian labor market, such as its extreme geographical immobility and the weakness of trade unions, might, however, delay this process.

Extending the set of questions addressed in this article, future studies could consider comparisons of rates of return and rates of exploitation among different transition economies. Another direction of research would be to link the dynamics of profitability in transition economies to a wider group of economic and political factors in the framework of social structure of accumulation theory (Gordon 1978, 1980; Bowles, Gordon, and Weisskopf 1986; Kotz 2003; Wolfson 2003). Still another direction would be to compare profitability in different sectors of transition economies. As more data on transition economies become available and as its quality improves, these and other directions of research will become more accessible for exploration and analysis.

Appendix

The source of data for calculation of the general rate of profit and other relevant variables is the Russian national income statistics as compiled by the State Committee for Statistics (Goskomstat; various years) and published in the *Rossiiskii Statisticheskii Ezhegodnik* (Russian Statistical Yearbook) and other Goskomstat publications. The 2001-2002 data are taken from the Statistics of Russia, the Goskomstat electronic database (<http://www.infostat.ru/epub.htm>).

In the numerator of the general rate of profit for the economy, we used gross profits before taxes, measured in current prices. Gross profits in Russian statistics include all types of capital incomes with the exception of profits “received as a result of change in price of assets held by enterprises” (State Committee for Statistics 2001: 308–9). Exclusion of such profits indicates that gross profits in Russian national income accounts do not include exorbitant interest on government bonds, received by Russian companies in the 1990s. Gross profits, however, include mixed profits, which are defined similarly to proprietors’ incomes in the U.S. national income accounts. In the 1994–2002 period, mixed income in Russia averaged about 30 percent of gross profits. Assuming that about half of mixed profits represent labor incomes, we split them equally between profits and labor compensation. See State Committee for Statistics (2001: 171–72, 279, 295–300, 308–9; 2002: 297) and Statistics of Russia (2003).

In the denominator of the rate of profit formula for both economy and industry, we used gross stock of fixed capital, valued at replacement cost and measured in current prices (see State Committee for Statistics 2001: 171, 280, 296–99, 302, 305, 308–9). To calculate capital utilized in production (K_u), we multiplied the measured gross capital stock (K) by the capital utilization rate (K_u/K). Data for the capacity utilization rate were taken from the *Russian Economic Barometer*. See State Committee for Statistics (2001: 279, 295–300, 302, 305, 349), Statistics of Russia (2003), and Russian Academy of Sciences (2003). *Russian Economic Barometer* 9 (2): 47.

Selecting gross rather than net measures of profits and capital is preferable for transition economies, such as Russia, due to the extreme unreliability of official estimates of depreciation. Generally speaking, these estimates understate annual depreciation of capital and overstate profits because enterprises were not allowed to write off many of the useless assets inherited from the premarket period. Officially allowed depreciation, however, probably overstates part of the cash flow actually used for capital preservation. It is well known that in the course of the 1990s, Russian enterprises massively engaged in capital consumption through “asset stripping” and capital flight.

In measuring the rate of surplus value (rate of exploitation), in the numerator we used profits, as defined above. In the denominator, we used total labor compensation, based on national income accounts increased by one-half of mixed incomes. Labor compensation data, as presented by Goskomstat, include employer contributions to social security and so-called hidden compensation. This item covers an official estimate of payments in kind, unregistered cash transfers, interest-free loans, and other forms of compensation to employees not reported to the government (see State Committee for Statistics 2001: 308). These payments are widely used by Russian companies to reduce payroll taxes. In the second part of the 1990s, they amounted to 25–28 percent of the official payroll. Estimates of hidden compensation are available only for the economy as a whole. For the industry, hidden compensation was estimated based on the share of industrial output in total GDP. Data for real wage and productivity were taken from State Committee for Statistics (2002) and Statistics of Russia (2003).

For the United States, estimates of the share of profits and the rate of surplus value were made based on the national income and product accounts data for the nonfinancial corporate sector. Profits for the 1994–2002 period were computed as a sum of gross corporate profits before taxes with inventory valuation and capital consumption adjustment and net interest. Labor compensation included wages, salaries, and supplements to wages and salaries (Bureau of Economic Analysis [BEA] n.d.).

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