MODERNISING RUSSIA'S NATIONAL ECONOMIC SYSTEM

The Potential for Reindustrialisation

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Abstract: The author analyses the problem of reindustrialisation as the basis for the modernisation Russia's national economic system. The main goal of reindustrialisation has to be restoring the role and place of industry as the basic component of the country's economy. In Russia, the "invisible hand of the market" cannot by itself ensure the necessary structural shifts in the material and technical basis of the economy; so to supplement the self-regulation of the market, our country needs both stimulation of business and limitations on it, consciously imposed by the state. Thus, selective state regulation is indispensable in Russia, and the main objective is to identify key areas for development.

Key words: reindustrialisation; productivity of labour; modernisation

Post-Soviet Russia has found itself in a difficult historical situation, with its economy for many years in a state of transition which involves the disintegration of the old economic system and the establishing of its successor.

It is obvious that any economic system must ultimately grow decrepit and fall apart and that a new system will take its place. Nevertheless, the period of transition from one system to the next is fraught with substantial problems. R. S. Grinberg and A. Y. Rubinshteyn emphasise correctly that such stages in the development of each phase of social evolution

> are characterised by incompleteness, by an absence of integration, by the co-existence of elements of the old and new economies. The period between the

> two mature states is thus marked both by the establishing of the new economic system, and simultaneously by the decay and dismantling of the old. (Grinberg and Rubinshteyn 2000, 85)

The incompleteness and lack of integration of the economic system in its transitional state are likely to cause significant economic decline.

> The negative results of the market transformations have been more visible and obvious, clearly predominating over the successes. It is not only that the country during the years of reform lost half of its productive capacity; worse still is the fact that so far, it has proven impossible to halt the primitivisation of production, the de-intellectualisation of labour and the degradation of the social sphere. Added to this must be the emergence of mass poverty, which during the years of radical change expanded apace. (Grinberg 2006, 11)

This occurred in Russia as a result of the accelerated disintegration of the elements of the old, planned economic system at the same time as the process of putting the economic relations and institutions of the new market system in working order lagged behind. The hopes that the mechanisms of market self-regulation would function automatically under the conditions of the transition held back the process of establishing market institutions.

Still worse was the fact that the economic policies being applied steered the new economic relations in an incorrect direction that bore no relation to the existing material, economic and socio-cultural preconditions. The economy reacted to the uncertainty—or rather, to the distortion—of the economic signals by reducing demand and accordingly, production; by shortening the horizon of economic decision-making; and by rejecting long-term investments and high-risk projects. At the same time, the layer of the population that could not provide itself with an adequate income from its economic activity increased in size.

An economic system that gives rise to such social problems as growing income inequality and a deepening stratification of the population on the basis of property holdings creates an inefficiency trap for itself, since it undermines the main source of development of a modern economy. As R. S. Grinberg notes, the dramatic weakening of Russia's scientific-technical and human capacities represents one of the most severe losses the country has suffered throughout all the years of reform, from both the economic and social points of view. In Grinberg's view, "the greatest tragedy of our present-day existence is the monstrous stratification as a result of which 10 per cent live well while 70 per cent merely survive" (Grinberg 2012, 61).

According to data from Russia's official statistical services, the incomes of the most prosperous 10% of the population in 1992 exceeded those of the least

well-off 10% by eight times, and by 2013, by 16.4 times (Federal Service of State Statistics 2001, 176; 2011, 130; *Rosstat* 2013).

Although the share of wages in GDP has now increased somewhat by comparison with the 1990s, and roughly resembles that in developing countries, the high level of differentiation of incomes has led to a sharp divergence between median and modal incomes and the average figure. This means that most of the population receives incomes noticeably lower than the average. Hence, in 2013, according to data of the Federal Service of State Statistics, the average monthly income per head of population was 25,928.2 rubles, the median income was 19,151.4 rubles, and the modal income, 10,448.6 rubles (*Rosstat* 2015). The discrepancy between these figures is characteristic of all states, but in Russia, it is significantly greater than in any of the developed countries.

It cannot be said that Russian scholars have sidestepped the question of why the modern Russian economy has been unable to solve the problem of the inadequate effectiveness of its economic and social institutions.

The central topic of this article is the search for alternatives to the stagnation that has come to characterise the Russian economy. It is a topic that deserves the most intensive examination.

For all its importance, criticism is not enough on its own. An alternative set of positive recommendations, validated theoretically and tested in practice, is also required.

For all the diversity of approaches to this phenomenon, its core in our view must consist of a precise definition of the *goals* of economic development, and of the *mechanisms of state regulation* that act as the principal *means* for realising these goals.

Included in this list of the goals of economic development must be the reindustrialisation of our economy on the basis of the priority development of advanced technologies. This imperative is not simply a concession to the theoretical discourse that identifies material production as a priority (though I should note in passing that restoring this approach to its rightful place represents an important positive shift in Russian economic science). Reindustrialisation on the basis of advanced technologies also

1. Provides a key to the development of modern science,
2. Stimulates progress throughout the education system, and ultimately,
3. Acts as a basis for developing the country and its security, while enhancing the human qualities of our citizens, that is, realising Russia's historic mission.

And now, on the means for attaining the goals noted here.

As we are well aware, the experience of development of both the Russian and world economies during the twentieth century showed that comprehensive state ownership brings about an "economy of shortages," and eventual crisis.

Nevertheless, the experience of the past 15 years, of the early twenty-first century, shows that rejecting active state regulation of the *market* economy also leads to an impasse—to the dead end of financialisation, deindustrialisation and world crisis.

In Russia, this has provided a stimulus for an increasing number of economists, both theoreticians and those of a more practical bent, to conclude that for the state to play an increased role in the economy is essential. Here, however, we need to remember that "the devil is in the details." An increase in bureaucratic interference, with growing numbers of state functionaries who "create a nightmare for business," will not solve the problem.

Consequently, we are again faced with the theoretical question of the degree and mechanisms of state regulation that are required, and that are, moreover, applicable to a specific economic system—that is, to our Russian economic complex with all its peculiarities.

Here I shall not go into the details that I have set out in numerous publications, but will stress only the main point: the Russian economy needs a system of active but indirect state measures aimed at determining the basic proportions of production. Subsequently, this system will be referred to by the term "industrial policy," understood as the regulation not just of industry but of the country's entire macroeconomic complex.

The most important is economic practice; though various outstanding scholars have also contributed to developing the propositions now to be set out, we go on to assert the following:

In Russia, the "invisible hand of the market" cannot by itself ensure the necessary structural shifts in the material and technical basis of the economy, while without such fundamental shifts the further development of our economic system will finish up in terminal stagnation.

To supplement the self-regulation of the market, our country needs both stimulation of business and limitations on it, consciously imposed by the state. The arguments backing up this thesis are familiar in principle, but need to be set forward in systematic fashion. Summarising briefly the results of earlier research, we emphasise that selective state regulation is indispensable in Russia for the following reasons.

First, the structural disproportions that have appeared in the material and technical basis of our economy (above all, the collapse of high-technology material production) are so profound that even if the "invisible hand of the market" can correct them, this will take decades to occur. Our country does not have this amount of time available.

Second, Russia faces the task of ensuring its economic security, and this is now impossible without import substitution. The latter in turn is conditioned by the need for active, selective regulation of production.

Third, for Russian society the phenomenon of the general interest, of the interest of the population as a whole, is not just a spiritual but also a social parameter. This interest exerts a substantial influence on economic policy and can and must be supported by corresponding measures on the part of the state.

This list of reasons might be continued, but what is important here is to avoid forgetting a second aspect of the contradiction that genuinely exists between the market and state regulation. This second aspect—the initiative and independence of market actors—requires no less support. Here too we have been and will remain allies of the liberal economists who insist on the need to guarantee such absolutely essential conditions for production as guarantees of property rights, contracts and so forth. Industrial policy will only be effective if regulation is based on the initiative of the producers, and the guarantees referred to are a condition of this.

Over more than 20 years, the implementation in Russia of a *liberal-monetarist* model has brought a deterioration of the conditions for production, a decline of the industrial sector, and a lessening of the resilience of the economy. Furthermore, it has now seen a dramatic increase in our dependency on foreign capital, technology, and material products including consumer goods. In particular, material output in key basic sectors has fallen to a fraction of its earlier levels. This means that the growth of imports has taken place at the expense of our own production. In the year 2000, we spent $10 billion on importing machinery, equipment and vehicles. In 2014, we spent $150 billion, a 15-fold increase. The share of imports in machine-tool construction and light industry now exceeds 90%, while in heavy machine-building, radioelectronics and medical equipment, the figure is above 80%. The situation is similar in other sectors of the economy. Meanwhile, our needs have not diminished. In the year 2000, we imported foodstuffs to the value of $7 billion, while in 2013 the figure was $43 billion, an increase of six times over 14 years. But we have not begun eating six times as much; if anything, consumption has declined.

In the course of the 1990s, the share represented by manufacturing industry in Russian GDP declined dramatically. But even after the process of transforming the economy from a planned to a market system had been completed, this trend continued (Table 1).

In Russia, during the 1990s more than 75,000 industrial enterprises ceased operating, while the number of people employed in industry shrank from 17.2 million in 1990 to 13.4 million in 2013 (Ryazanov 2014, 17–25). This decline is sometimes explained on the basis of a need to shut down obsolete, inefficient enterprises inherited from the Soviet period. Nevertheless, the curtailing of

Table 1 Structure of GDP in Russia (%)

	2002	*2011*	*2012*	*2012 cf. 2011 (percentage points)*	*2012 cf. 2002 (percentage points)*
GDP at market prices	100	100	100		
Agricultural output	5.3	3.5	3.1	–0.4	–2.2
Fishing and fish farming	0.3	0.2	0.2	0	–0.1
Mining	5.9	9.2	9.3	0.1	3.4
Manufacturing output	15.2	13.2	13	–0.2	–2.2
Inc. petrochemicals and coke	1.8	3	3	0	1.2
Electrical energy	3.2	3.3	3	–0.3	–0.3
Construction	4.7	5.6	5.5	0	0.8
Trade and commerce	20.2	16.7	16.9	0.1	–3.4
Hotels and restaurants	0.8	0.8	0.8	0	0
Transport and communications	9	7.1	7	–0.1	–2.1
Financial activity	2.6	3.5	3.7	0.2	1.1
Real estate and rents	9.4	10.1	10.1	0	0.7
State administration and defence	4.5	4.8	5.6	0.8	1.1
Education	2.6	2.5	2.6	0.1	0
Health care	3	3.1	3.3	0.2	0.4
Other social services	1.7	1.4	1.4	0	–0.3
Net taxes on products	11.5	14.9	14.5	–0.3	3

Source: *Rosstat* (2013, 2015, 2016).

production in a whole number of sectors of manufacturing industry took on catastrophic proportions (see Table 2).

Throughout recent years, an unfavourable relationship between the prices for the output of extractive industries and those for manufactured products has persisted in the Russian economy. This has led to a fall in the profitability of manufacturing, from a rate of 15.3% in 2005 to 8.8% in 2013 (Federal Service of State Statistics 2014a, 151). This unfavourable economic situation has played a part in the continuing decline in the number of manufacturing enterprises, something especially noticeable in the area of machinery and equipment production, where the number of enterprises shrank from 74,000 in 2005 to 42,000 in 2014 (Federal Service of State Statistics 2014a, 63; 2014b, 145–48). But even given this dramatic fall in the number of machine-building firms, the level of utilisation of productive capacity in the surviving enterprises is a mere 56%. Across manufacturing as a whole, the figure is only about 60% (Glazyev 2015, 18).

The fall in the relative weight of manufacturing industry has been accompanied by an especially marked decline in the building of machine tools. In 2008, Russia produced a mere 4,900 metal-working machine tools, that is, only 6.9% of the number in 1990. Meanwhile, some 225,000 machine tools had been imported (Ryazanov 2016, 391–92).

Table 2 Dynamic of Industrial Production, 1991–2010

Index	*2010 cf. 1991 (%)*
General economic indices	
Index of industrial production cf. base year (%)	83.8
Output indices for types of economic activity in OKVED departments C, D and E (% of base year, adjusted for informal activity)	
Mining	108.8
Manufacturing industry	78.6
Production and/or distribution of electricity, gas and water	89.1
Mining—coal, oil and gas	
Coal, million tonnes	91.2
Oil, inc. condensate, million tonnes	109.5
Gas, inc. as by-product, billion cubic metres	101.2
Manufacturing output	
Metallurgical production and output of finished metal goods	
Finished rolled ferrous metals, million tonnes	104.7
Steel pipes, million tonnes	87.6
Production of various types of machinery and equipment	
Domestic refrigerators and freezers, thousand units	95.9
Metal-cutting machine tools, thousand units	4.1
Production of transport vehicles and equipment	
Passenger cars, thousand units	117.5
Mobile cranes, thousand units	22.5
Mainline rail freight wagons, thousand units	225.4
Production and distribution of electrical energy	
Output of electrical energy, billion kWh	97.2
Consumption of electrical energy, billion kWh	96.6

Note: OKVED = All-Russian Classifier of Economic Activities.

Source: *Rosstat* (2013, 2015, 2016).

In many respects, the collapse of machine-tool construction has been representative of the technological decay of the economy of the Russian Federation. Between 2010 and 2013, the number of advanced technologies employed declined from 18,000 to 12,000, while between 2005 and 2013, the number of new technologies introduced to make up for these losses was only about 1,000 (Sukharev 2015, 83).

These facts allow us to conclude that a profound deindustrialisation has taken place, threatening the capacity of Russia's economy for independent development.

In light of the foregoing, it is necessary to stress three key aspects of the topic of raising labour productivity in the Russian economy:

First, the reasons for the present unsatisfactory state of labour productivity in Russia.

Second, the most important steps that in my view need to be taken in order to end these failings.

Third, the question of the institutions that are capable of putting these changes into effect.

The *first* issue that needs to be addressed is thus the causes of the recession in the real sector in general, and of low labour productivity in particular.

There are of course many factors influencing the situation. Nevertheless, I am prepared to state that to a significant degree, the present recession is a result of the *profound deindustrialisation of our economy.*

World history shows that deindustrialisation of an economy always leads to economic stagnation, and to the appearance of many characteristics which may be designated, so to speak, using the prefixes "dis-" or "de-":

- Disorganisation of the production process, that is, a reduction in the level of organisation of production and in the quality of production management;
- Degradation of the technologies used, with a fall in the technical level of production;
- Dequalification of the labour employed in production; and
- Decline in the range and complexity, that is, simplification, of the output of the production process.

The inevitable consequences include the following:

- Destabilisation of the financial and economic state of the productive enterprises concerned;
- Disintegration of industrial plants and of the structures that link them together; and many more such "dis-" or "de-" phenomena.

Unfortunately, our experience in Russia bears out this thesis.

The trend towards deindustrialisation became established as a result of the so-called "shock therapy" policies that flowed from the "market fundamentalist" reforms of the 1990s, and of the policy of living off our oil and gas revenues (or of "reserving" them) during the decade that followed. Obviously, to continue with this economic approach—I would call it a *policy of deliberate deindustrialisation*—is becoming increasingly dangerous, and is worsening the risk of national disintegration.

Overcoming these practices is critically necessary. Only in this way can we radically alter course, and move from *de*industrialisation to *re*industrialisation.

Second, if labour productivity is to be increased, we need a new economic doctrine for Russia. Rejecting the practices of "market fundamentalism" and of "eating our way through" our national wealth will require posing the task in unambiguously tough fashion. Today, the economic community and our

political authorities are faced afresh with the *increasingly urgent* need to seek not just a *new model of economic growth,* but more broadly, a *new economic doctrine for Russia.*

The *mechanism* for renewing economic growth, the *underlying paradigm* for a developing Russian economy rather than a stagnant one, has to be *reindustrialisation*. The *main goal of reindustrialisation* (or of a *"new industrialisation"*) as an economic policy representing a set of specific measures, has to be *restoring the role and place of industry* as the *basic* component of the country's economy. Moreover, this needs to occur on the basis of a new, advanced technological structure that features fifth-generation and elements of sixth-generation technologies. This needs to be done through carrying out a complex of interlinked economic, organisational and other tasks *within the framework of a modernisation of Russia.*

Unfortunately, Russia at present is incapable of implementing a policy of reindustrialisation while relying on its own technological-productive base. The technological renewal of the country's manufacturing industry depends to a very high degree on imports of machinery and equipment. Due to the decay of Russian machine-building, many types of machinery and equipment are not produced in the country or are noted for their poor quality and are thus in little demand. According to calculations by experts of the Institute of Economic Forecasting of the Russian Academy of Sciences, domestic production is capable of supplying only 44% of the renewal of basic assets required in the Russian economy (Ivanter 2006, 200).

This weak ability of the Russian economy to provide its own competitive products in the area of machinery and equipment is combined with inadequate activity in developing and applying new technologies (see Table 3).

Labour productivity is the principal ingredient needed for resolving this problem. Meanwhile, and despite the incessant declarations that raising the productivity of labour is a state priority, the situation in this area remains dismal. In its GDP per capita the Russian Federation holds 56th position in the world, on a level with Croatia and Malaysia. Among the countries of the OECD, Russia holds next-to-last place for labour productivity (in last place is Mexico). According to OECD data, an hour of labour in Russia contributes to GDP only 45% of the corresponding sum in the European Union, 40% of the sum in the US, and 29% of the sum in Norway.

The key technical and economic factors involved in raising labour productivity are well known. They are

- Comprehensive renewal of technology, above all in the area of fixed capital;
- The development of new, highly-qualified, creative human potential;
- The use of modern management methods ("economical production," "just in time" production, worker participation in management, etc.); and
- The reintegration of science, education and production.

Table 3 Development, Acquisition and Use of Advanced Productive Technologies in Russian Manufacturing Industry (2010–2015)

Index	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*
Number of advanced productive technologies implemented	231	338	336	398	414	442
Number of productive technologies implemented that were new to Russia	215	320	320	374	382	416
Number of essentially new advanced productive technologies	16	18	16	24	32	26
Number of advanced productive technologies employed	135,945	118,021	119,182	121,103	127,492	146,700
Number of new technologies acquired	11,832	23,236	12,050	9,989	9,963	8,716

Source: *Rosstat* (2016).

The last of these requirements flows above all from the need to restore the connection that has been severed in Russia between production, the training of qualified personnel, scientific research and development, experimental and design work, and engineering and project activity. The science conducted in Russian universities and research institutes, despite having encountered setbacks, has nevertheless on the whole retained its positions; meanwhile, project, research and design organisations belonging to the sector of intra-firm science—that is, the ones connected most closely with production—have shrunk to a fraction of their size. During the period from 1990 to 2003, the overall number of scientific organisations declined markedly, with the number of project organisations shrinking by 87%; of design bureaus by 72%; and of scientific and technical departments in industrial enterprises by 44%. Overall, intra-firm scientific organisations in 2002 made up only 6.5% of Russia's total number of scientific bodies. In countries with developed market economies, intra-firm science accounts for the bulk of scientific research and development: 65% in the countries of the European Union, 71% in Japan and 75% in the US. In Russia, the share of intra-firm science in overall spending on research and development at this time was only 6% (Babkin 2004). The situation has not improved in the years since. Between 2000 and 2014, the number of intra-firm scientific departments continued to decline, if only slowly (Ministerstvo obrazovaniya i nauki Rossiyskoy Federatsii 2015).

It is also essential to note the extremely unfortunate situation with intra-firm spending on the training of personnel. In developed countries, firms spend from 2% to 5% of their wage funds on the instruction of workers, but even in the largest and most successful Russian companies, this spending does not exceed 2%, while

in the Russian economy as a whole it remains at the unacceptably low level of 0.3% to 0.4% (Bodrunov 2016, 269).

It stands to reason that the general level of spending on science and education also needs to be restored, since this index shows Russia lagging not just behind developed countries, but behind newly industrialising countries as well. We cannot hope to modernise our economy on the basis of modern technological achievements while the level of financing of science and personnel training remains as it is. Spending on education in Russia in recent years has remained at a level of about 4% of GDP, which puts Russia in 98th place (out of 153 countries) on this index (The World Bank 2014). Spending on scientific research and development amounts to about 1.2% of GDP, leaving Russia behind such countries as Iceland, Slovenia, China, Singapore and South Korea, not to speak of the most developed states (UNESCO Institute for Statistics 2016).

Far more controversial is the question of which economic methods and institutions will best ensure that these tasks are fulfilled.

As I stressed earlier, it is essential to reject the politics and ideology of "market fundamentalism." These concepts are among the main causes of deindustrialisation and low labour productivity in our country. Instead, the shift has to be made to a policy that rests on state regulation within a mixed market economy. This will set free the energies of high-technology non-resource business in the real sector, while directing these energies towards meeting national goals.

If a policy of reindustrialisation is to be implemented in Russia's economy, profound structural and institutional changes are essential.

In the first place, the need already exists for developing *large integrated structures* that combine science, education and high-technology production in an organised way and on a network basis (Vatutina and Vertakova 2010). These structures must also be more flexible, and less hierarchical and bureaucratic, than in the USSR. No less important is taking greater account of market criteria, of stimuli, and of the motivations (reducing expenses, monetary stimulation etc.) for their creation and functioning.

Second, the developing of such structures requires *large-scale, long-term state programs.* Unlike Soviet directive plans, these must be indicative, basing themselves on a system of flexible indirect stimuli and restraints (taxes, credits and so forth) while combining private and state resources (Gruchy 1984).

Third, these programs need powerful *ideological and political support* that creates additional motivation for implementing them through the formation, in society and in the professional community, of an orientation towards the necessity of reindustrialisation.

These approaches rest on analysis of both the positive and negative features of the historical experience of industrialisation in the USSR, as well as on the

experience of newly industrialising countries and on the lessons of the active industrial policies implemented by developed countries (France, the Federal Republic of Germany, Japan and Italy) during the three decades following the Second World War. The practice of all these countries showed that if rapid and profound structural shifts in favour of sectors with advanced industrial technologies are to be carried out in the economy, active state intervention is indispensable. This must not, however, block entrepreneurial initiative, but needs to support it.

This same historical experience demonstrates that applying neoliberal recipes has not yet allowed a single country to achieve a leap forward, overcoming economic backwardness and moving onward to advanced technological positions (Aghion 2009; Carmody 2009; Tregenna 2009). Even when financial liberalisation has given developed countries a temporary economic boost, it has brought with it critical long-term problems (Stiglitz 2009).

The government of the Russian Federation is already proposing specific steps to this end. But these measures are being worked out and implemented too slowly, and in half-hearted fashion. In any case, they are insufficient.

To radically alter the situation with labour productivity, and to make the shift to genuine reindustrialisation on the basis of modern technologies, the following measures are required.

First, there is a need for clear rules that do not change over the long term, and for a rejection of arbitrary and opaque state regulation. At present, state officials create continual nightmares for business, deterring enterprises from making long-term investments.

Second, there is a need at a minimum for medium-term programs to develop key areas of industry, with a view to *integrating all indirect regulatory measures*, including those already proposed by the government, *into a single complex* that embodies:

Economic sanctions designed to induce enterprises to carry out modernisation (requirements that the best available technology be used, "environmental" tariffs and norms, etc.);

Moves to stimulate technological modernisation (lowering the cost of credit for industry to annual rates of 3% to 5% for up to 15 years for newly established or modernised industrial installations; tax holidays; simplified granting of state guarantees);

A system of medium and long-term state orders for goods and services needed to ensure reindustrialisation.

Third, a system of state-wide measures to provide infrastructure support for reindustrialisation, to create personnel training systems, to furnish information, and so forth.

Fourth, the creation of new institutions to foster development at the micro-level. A particular need is to expand the practice of forming clusters of productive-scientific combines that integrate production, science and education within the framework of single large structures.

Fifth, selective support for small and medium businesses oriented towards carrying out the tasks of reindustrialisation.

As was stressed earlier, raising the productivity of labour in Russia is possible only on the conditions that (a) the causes that have led to deindustrialisation are done away with; and (b) a new economic doctrine, whose main parameters have been set out above, is put in place.

Even this, however, will not be enough. An economy has other dimensions apart from the productive, institutional and political. *The main dimension of an economy is the human one*. It is here that radical changes, including ideological ones, are essential. A general national renaissance, on the basis of modern production, needs to form one of the country's main cultural and ideological reference points. Only in this way will the policy of reindustrialisation acquire a powerful, dedicated subject of its actions. Not only the state, but also the country's intellectual leaders, along with labour unions and associations of employers, must take on this role.

It is only through carrying out such a shift—on the scale of the entire state, and if you will, of *civilisational* scope—that we can muster the strength to renew our country's economy and in particular, to raise the productivity of labour.

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