

Growth in a transitional economy

Sergei Glazyev's 1996 report to the Scientific Council of the Central Mathematical-Economics Institute of the Russian Academy of Sciences.

Sergei Glazyev is chairman of the Democratic Party of Russia. Minister of Foreign Economic Relations of the Russian Federation in 1991 at the age of 31, he was the only member of President Boris Yeltsin's cabinet to resign in protest in September 1993, when Yeltsin abolished the Parliament and the Constitution. He was elected to the State Duma, the new Parliament, in December 1993, and headed its Committee on Economic Policy until December 1995. The Congress of Russian Communities slate, on which he ran for reelection, missed the 5% level required for entering the Duma.

As a government minister, Glazyev fought against the looting of Russian raw materials. Himself a graduate of the Central Mathematical-Economics Institute (CEMI) of the Russian Academy of Sciences, known as a hotbed of reform projects, he warned already in 1991 against "market romanticism" that promised "economic prosperity in not less than 1.5 to 2 years." Government shock therapy reforms were implemented by Prime Minister Yegor Gaidar, starting in January 1992.

While serving in the Russian government and the Duma, Glazyev continued to collaborate with CEMI, and he still does. His report to CEMI's Scientific Council, "The Theory of Economic Growth in a Transitional Economy," was released to the public on April 29 of this year. This scathing exposé of the Russian economy's destruction under "the ideology of radical liberalism" is excerpted here, with the author's permission. (Readers can find earlier programmatic material from CEMI in EIR, Aug. 25, 1995, where we published Academician Dmitri Lvov's report, "Toward a Scientific Grounding for Economic Reforms in Russia," with Lyndon LaRouche's introduction, "The New Role for Russia in U.S. Policy Today.")

*Glazyev uses terminology from the so-called long-wave school of economic research, initiated by the Russian N.D. Kondratieff (1892-193?—he died in a Siberian prison camp), and continued by Harvard's Joseph Schumpeter (1882-1950) in his 1939 book, *Business Cycles, and others*. Glazyev terms successive sets of technological innovations, dominating the economy during given periods, each as a single *uklad*, which may be translated as "structure," "mode," or even "vintage." Here it is rendered "structure," or "structure-period," when necessary to distinguish the term from other words for "structure" in the surrounding text.*

Quotation marks denote paragraphs translated verbatim. All other sections paraphrase Glazyev's text. Editorial interpolations are in [brackets]. Major subheads are the author's; others have been added. The graphics have been renumbered, since not all illustrations in the original paper were used.—Rachel Douglas

"Economic growth is the natural goal of economic policy in any country. In our country, however, for several years economic growth goals have been pushed to the back burner, not even mentioned in official programmatic documents. Liberalization, privatization, stabilization, and other sorts of economic policy took the place of goals, as a result of which economic policy became meaningless; it turned into a chaotic array of poorly interrelated lines, each carried out independently from the others. Indicators such as quantity of enterprises privatized, inflation, reduction of customs duties, portion of prices decontrolled, and others that reflect the implementation, as opposed to the purposive component of economic policy, have been used as evaluative and accounting indicators, in place of indicators showing the standard and quality of living, volume of production activity, scientific and technological progress, and economic efficiency. With this kind of approach, those in power lose their natural guideposts; in the midst of a catastrophic collapse of production and the standard of living, and the destruction of the country's scientific and defense potential, they report on alleged successes, relying on limited and inherently meaningless indicators of the portion of firms privatized or prices decontrolled.

"In recent months, there have been symptoms of those in power coming to their senses, in some measure: Official programmatic documents more and more frequently mention the desirability of economic growth. But, so far, this has not gone beyond general talk; goals of economic growth have not yet assumed the main place in actual economic policy. Nor has there been any conscious reflection upon the mistakes that were allowed, which must be corrected in order for there to be a shift to economic growth. On the contrary, the notion is being promoted that a deep economic collapse and the impoverishment of the population are natural, even objectively predetermined, in a period of reforms. As a result, reforms become meaningless, although if they were carried out with some literacy, both foreign experience and our own show

convincingly that the people's welfare would rise and a growth of consumption take place. So it was in Russia at the beginning of the century, in Germany and Japan after the war, and so it is now in China, Vietnam, and other countries, where economic liberalization was accompanied by rapid economic growth. World experience convincingly demonstrates the interrelationship of successful reforms and economic growth: The consolidation of new economic institutions and forms of economic management is possible only through a process of natural selection, where the criteria are the increase of economic efficiency, and growth; conversely, a deterioration of the economy as a result of its reform breeds a counter-reform and the rejection of those new forms of organization of economic activity, which have proved to be unviable.

"This paper examines the theoretical foundations of the actually implemented policy for transition from an economy managed by directive to a market economy, analyzes the reasons for failure and the missed opportunities, and establishes the theoretical preconditions for a growth policy in a transitional economy."

Objective and ideological preconditions for the transition

The transition from an economy managed by directive to a market economy in the area of one-third of the planet was motivated by the aspiration of the elites in those countries, to make their national economies more effective, raise the standard of living, and improve the competitiveness of their enterprises. The gap between the developed, primarily market economies and the CMEA [Council for Mutual Economic Assistance, also known as Comecon] members grew rapidly in the 1970s and 1980s, for all of these parameters. The U.S.S.R. lagged 10-15 years behind the developed capitalist countries during the 1960s, but 20-25 years by the mid-1980s. This was the result of lawful phenomena in an economy managed by directive: low investment activity, prioritization of sector expansion, super-bureaucratization of management, ossified decision-making procedures. These led to economic resources being locked into the reproduction of obsolete technologies, the lack of correspondence between demand and the structure of production, and the deceleration of scientific and technological progress.

With these growing disproportions and the slowing of scientific and technological progress and growth, there was a search for new economic policies. From the outset, this search was influenced more by ideological dogmas, than by modern knowledge about the lawful functioning of real economic systems, mechanisms of growth, and scientific and technological progress. In the first half of the 1980s, attempts to overcome the depression tendencies were made in the traditional manner for an economy managed by directive—changes in



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the centrally determined priorities, and reallocation of resources in favor of the science-intensive sectors of industry. These attempts at solving the accumulated disproportions by centrally planned modernization, made under the slogan of "acceleration," ran up against the production-sector systems, whose interests continued to dominate economic relations. "Acceleration" affected only a small portion of centrally allocated resources.

The failure of "acceleration" shed light on the underlying causes of the depression. This stimulated attempts at reform of the institutions and economic mechanisms of the system. In this phase (second half of the 1980s), the search again went forward within the limits of traditional ideological stereotypes, without breaking out of the framework of the officially approved postulates of socialist political economy. In accord with the tendencies for the increased independence of enterprises, developed since the mid-1970s, it was decided to broaden their independence regarding price formation, supply of materials and machinery, and allocation of earnings, while they remained administratively subordinate to the industrial-sector ministries. The economic authority of state and party management bodies was reduced. Citizens received the right to engage in individual labor and cooperative activity.

Despite these seemingly radical innovations, the system of state planning and resource allocation was practically unchanged. The result was the weakening of centralized economic management and strengthening of the economic power

of state enterprises, while mechanisms of responsibility were attenuated. This led to greater material and financial imbalances, while the state budget deficit and inflation grew.

Contrary to design, the outcome of this phase of economic reform was a strengthening of agency authority; under pressure of lobbying from production-agency systems, the adoption of irrational decisions at the higher levels of state power became more probable. Under these conditions, weakened state control could only aggravate disproportions in the national economy.

In the transition to the next stage of reform, at the end of the 1980s, ideological considerations continued to dominate, despite the non-correspondence of intentions and results. Now, the ideological notions were revised, in favor of the previously much-criticized scheme of "market socialism." This meant radically expanded independence for state enterprises, replacing their administrative subordination to agencies, with responsibility of enterprise managers to their labor collectives, who received a number of key prerogatives of a property-owner, respecting the allocation of state resources.

In a highly monopolized economic milieu, with uncompetitive products and with continued central control over price formation and resource allocation, the consequence of this innovation was a shift in enterprise behavior, toward the use of current incomes for consumption, at the expense of the enterprises' long-term development. The enterprises acquired greater ability politically to pressure central and regional government agencies for special privileges. The conception of "regional cost accounting," then in effect, strengthened this tendency.

The new forms of production relations—state enterprises, managed by their labor collectives; cooperatives; self-managed public organizations—were varieties of enterprises managed by their labor collectives. Theory and practice show that this form of property has serious limitations.

Rapid and efficient development of a market economy is based on innovation and resource reallocation from inefficient spheres to efficient ones, under the pressure of competition on commodity, labor, and capital markets. Collective enterprises, as a rule, are sluggish in reacting to conjunctures. The circulation of capital is slowed by its dissipation, and the lack of interest, on the part of the large number of people determining its allocation, in the maximization of profit. Labor collectives are interested in continuing the reproductive process, regardless of its efficiency. In an economy of self-managing enterprises, it is difficult to create a property-titles market, which is the basic capital market. This inhibits the development of an effective credit system, in the absence of accurate indicators of the market value of various products. The underdevelopment of institutions that enable productive accumulation to take place, as well as of those that integrate independent economic subjects for the purpose of raising their efficiency and rationalizing social production, determines that a system based on self-management will have low recep-

tivity to scientific and technological innovation, which, in turn, creates serious problems for economic growth.

Collective forms of property ownership do have certain advantages, especially respecting activation of "the human factor" in personnel management. But these only emerge in an economic milieu that has functioning competition mechanisms, credit, and a state policy for the promotion of scientific and technological progress. This milieu was absent.

Not surprisingly, the development of market relations under such conditions was destructive. The now more independent state enterprises adopted decisions that were irrational, from the standpoint of efficiency or the growth of social production.

The domination of ideological postulates, while objective economic laws were ignored, yielded disappointing results in these attempts to shift from an economy managed by directive to a market economy. The ideologically determined schemes failed, when they collided with reality.

It would seem, that the failure of the ideological approach to economic policymaking should have led to its replacement by a pragmatic one, based on the objective lawfulness of economic function. Instead, it was decided that the ideology in use was faulty, and should be replaced by a different one. The ideology of radical liberalism was selected; it was based on the formal theory of market equilibrium, and implemented in the form of "shock therapy." This ideology presumes free competition, and that persons and institutions active in the economy are rational and adequately informed. Its theoretical model attempts to prove the self-sufficiency of the market's self-organizing mechanism, for achieving optimal production efficiency. State regulation in any form is viewed as not only superfluous, but harmful.

The limitations of the neo-classical theory of market equilibrium are well known; its inadequacy to many facts of economic reality has been proven repeatedly, as has its inability to explain such phenomena—key for economic policy—as scientific and technological progress or economic growth, the unevenness of economic development, and the differences in the level of development from nation to nation. This theoretical conception also fails to take into account such fundamental facts of the real economy, as that economically active persons and institutions do not always behave rationally.

It is, therefore, no surprise that "shock therapy" based on radical liberalism failed to deliver. The prognoses of its authors failed to materialize—a failure unsurpassed in the history of economic forecasting. They forecast price stabilization at triple the pre-existing levels; since then, prices have increased thousands-fold, with no stabilization. Politicians forecast stabilization of the ruble at 80 rubles to the dollar; today it is around 5,000 rubles to the dollar. Rapid growth of production efficiency, with privatization, was forecast; in the event, efficiency has fallen in every area: productivity of labor in industry by 37%, power yield by about one-third. This holds for privatized enterprises, as well as those still in the

FIGURE 1
Volume of GDP output
(index 1990=100)

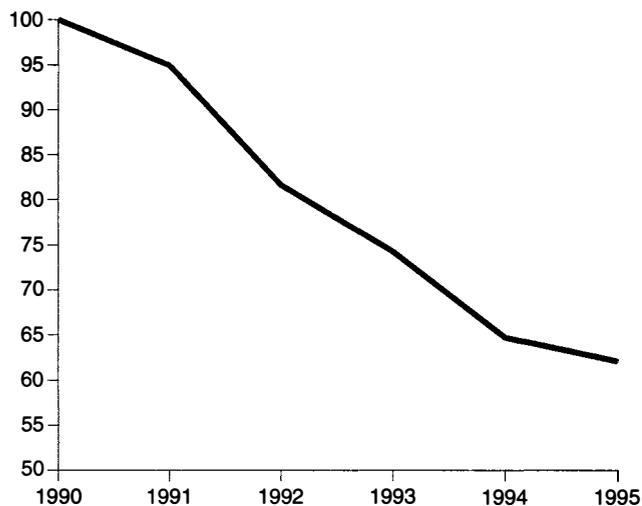


FIGURE 3
Volume of productive capital investment
(index 1990=100)

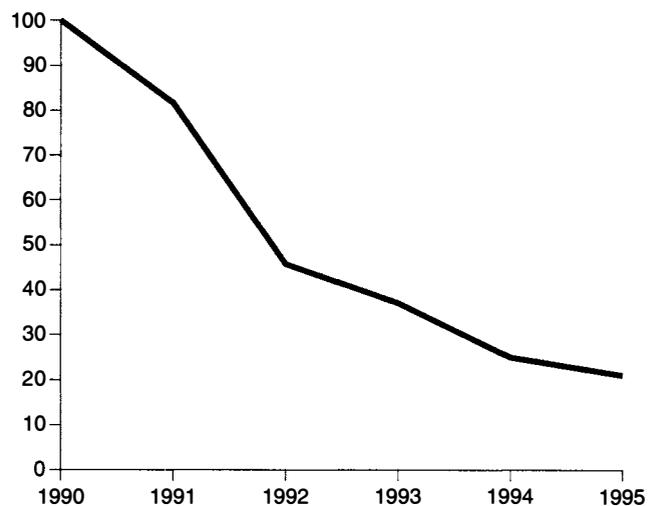


FIGURE 2
Volume of industrial production
(index 1990=100)

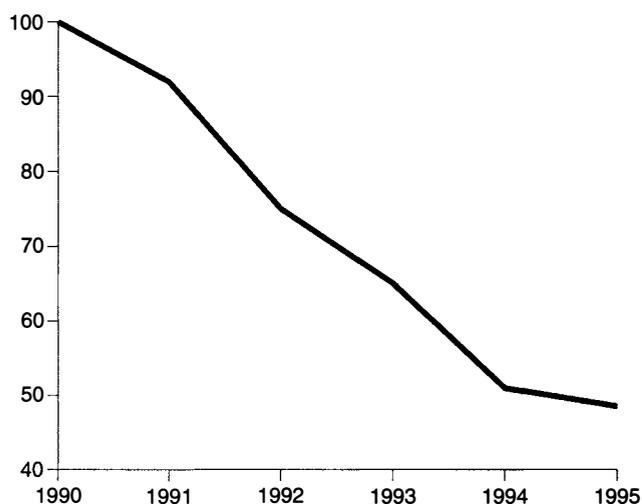
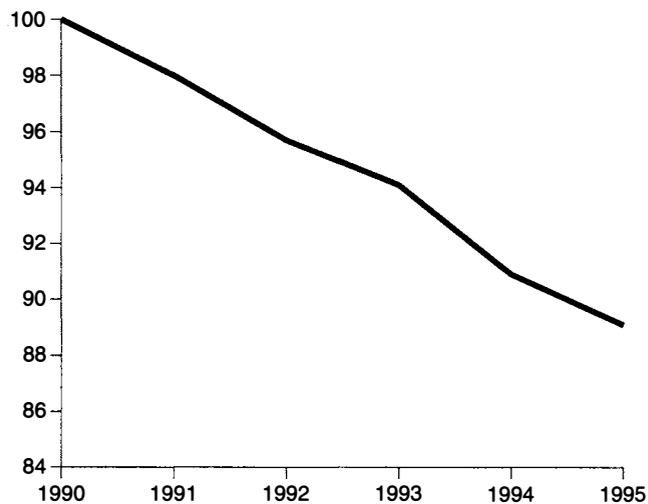


FIGURE 4
Employment
(index 1990=100)



state sector. “The collapse of production, provoked by ‘shock therapy,’ the decline of economic efficiency, and the destruction of the production capacities of countries subjected to this experiment, are unparalleled in peacetime economic history” (Figures 1-4).

In 1994-95, the gap between forecasts and actual results has reached threefold for inflation, twofold for the collapse of production; for investment activity, reality was in the direc-

tion opposite to what was forecast. Prognostications for real incomes and the standard of living were no better.

This is natural, given what the radical liberal ideological doctrine leaves out of account. In particular, it ignores motives for the abuse of monopoly positions in the market, the lack of competent courts, the criminalization of the economy, low competitiveness of production enterprises, the real structure of the money supply and circulation, the lack of correspon-

dence between supply and demand, structural disproportions, and much more.

“It is striking, that in our rational and pragmatic age, abstract ideological dogmas, far removed from reality, serve as the basis for economic policy instead of objective analysis and the modelling of actually existing interconnections. The content of economic policy has become extremely primitive. It reduces to a mechanistic adherence to three postulates: the liberalization of economic activity, the privatization of state property, and stabilization by means of formally planned increases in the money supply. This is done without taking into account the impact of price decontrol on the behavior of the monopolies, of foreign trade liberalization on the competitiveness of domestic enterprises, of the privatization of enterprises on their efficiency and market opportunities, of planning of the money supply on interest rates and investment. Naturally, this approach to economic policymaking dooms it to failure, in the achievement of planned results.

“It is worth examining the reasons for such strong ideological influences on economic policy. While its exceeding ideologization in the 1980s could be explained by the Party’s influence, today there are no objective reasons for this. Moreover, the interests of the overwhelming majority of society, of goods producers, workers, and the intelligentsia, require a completely different policy, which the ruling elite consistently rejects in favor of abstract ideological dogmas. At one time, such an approach was applied in our country by the Stalinist leadership and the Bolsheviks, in the period of collectivization, nationalization, and industrialization—with approximately the same results for production dynamics and the population’s standard of living.”

The IMF model

“The ideology of radical liberalism, consistently implemented in the former CMEA countries and known as the ‘shock therapy’ strategy, is a variety of the so-called Washington Consensus policy, developed by the IMF [International Monetary Fund] for backward Third World countries. It is distinguished by an extreme primitivization of economic policy, which is reduced to the three postulates: deregulation, privatization, and stabilization through strict formal planning of the monetary base. This policy is aimed at the maximum curtailment of the state’s role as an active subject of economic influence, and the limitation of its control functions over the dynamic of money supply indicators. And although the latter are usually set from above, and are systematically lowered for the purpose of combatting inflation, everything is sacrificed for their sake: Social spending is slashed, the financing of science is stopped, state investment programs are shut down, state purchases are not financed, wages are not paid on time, and so forth.”

The Washington Consensus principles were designed to establish elementary control over economic policymaking in

underdeveloped nations, to prevent foreign credits from being squandered. This explains its amazingly primitive character, where all questions of macroeconomic policy are reduced to formal planning of the money supply. The IMF was not so much interested in the content of policy, as in the ability to control the actions of these countries’ governments. Setting an austere target for growth of the money supply, the IMF blocked the governments’ freedom of action on all other economic policy questions. This policy did not lead to economic growth, but it ensured control, which was desirable for international finance and trade capital interested in controlling the markets of those countries.

“We were no exception to this roster of dependent nations. Under pressure from foreign creditors, the Russian leadership accepted the leading role of the IMF in shaping the economic policy of the state; for five years, its parameters have been set by IMF experts, and only subsequently confirmed by the government and the Central Bank with the relevant statements. There are no objective grounds for following such a logic in the planning of economic policy; it is a question of competence and of political choice.”

This primitivism ignored not only international experience and knowledge, but our own. This might be understandable in some underdeveloped nation, lacking a scientific community of its own, but for scientifically advanced Russia, with its own rich historical experience and world-famous schools of science, it is not.

The scientific paradigm known as “evolutionary economics,” is relevant today. It views the economic development trajectory as determined not by the static problem of achieving economic equilibrium, but by the entire preceding evolution of the economically active subjects, acting in a given economic environment. The behavior of economically active subjects is viewed as a variable, determined by the set of production possibilities, together with decision-taking procedures and the economic environment.

This paradigm may be applied to the Russian economy in a state of transition, both to describe it and to formulate practical economic policy recommendations.

Missed opportunities

“History, as is well known, does not recognize the subjunctive mood. Nonetheless, in the shaping of economic policy today, in order to avoid repeating the mistakes of the past, it is important to have a concept of their actual consequences.

“One of the widespread justifications for the negative consequences of the ‘shock therapy’ policy is the thesis that a supposedly inevitable catastrophe for the country loomed at the end of 1991, as well as that the crisis collapse of production was inevitable under any other economic reform

scenario. The apologists for the regime's policy also love to talk about earlier missed opportunities for a transition to a market economy—at the end of the 1970s or even the end of the 1960s, when, in their opinion, there still existed the possibility of a gradual, evolutionary entry into the market.

“Superficially, the thesis on the temporal limitation of possibilities for reform appears plausible. But this is the logic of revolution (as Lenin put it when he decided on the date for the October Revolution: Oct. 24 would be too early to organize the uprising, and Oct. 26 too late), which has the relevant socio-psychological explanation, but lacks any serious basis in economics. No doubt, had the famous October 1991 nighttime conversation of Burbulis with Yeltsin, on the formation of a government, taken place one day earlier or one day later, then Gaidar, perhaps, would not have been appointed chief reformer and the choice for ‘shock therapy’ would not have been made. But, in that case, there would hardly have been an economic catastrophe or an economic collapse more severe, than what occurred in reality.”

Our research shows [the author cites his 1993 book, *The Theory of Long-Term Technological-Economic Development*] that the U.S.S.R. entered a depression during the first half of the 1980s. The U.S.S.R.'s technological lag became more pronounced. Both phenomena were related to the shift of technological structure-periods in the developed countries, which occurred in the 1970s. The wide dissemination of basic technologies from the new technological structure (computerization, automation, informatization of production) led to improvements in efficiency.

The transition failed to happen in the U.S.S.R., where the existing organization of the economy blocked such a large-scale reallocation of resources and dissemination of new technologies. It was the collapse of the attempt to carry it out anyway, under “acceleration,” that prompted the reform attempts of the mid-1980s. Albeit with difficulties, until that time the process of economic expanded reproduction had continued well enough for the rise of living standards, defense production, and economic growth to continue.

The transition from one technological structure-period to the next is characterized by structural crises and economic depression. Behind the visible depression, however, there is an increase in innovative activity, dissemination of the next structure's technologies, the replacement of obsolete technologies, and the formation of new consumer preferences and markets. The depression ends, when the growth of production for the new structure begins to dominate. Sectors from the previous structure may survive in a state of crisis, until they are modernized and adapted to the new technological period.

By the early 1980s, the Soviet economy was multi-structured, with simultaneous reproduction of three technological structures. The first of those (the third, according to the generally accepted chronology) was created during the years

of industrialization, then largely reproduced during postwar economic reconstruction. Its key elements were the electrification of production, the development of machine-building and metals-processing, the use of steel as the main production material, coal as the primary fuel, and rail transport. In the developed countries, this structure reached the limits of its development in the 1920s, and gave way during the Great Depression to a new technological structure, based on the chemicals industry, specialized machine-building, the use of plastics and non-ferrous metals, increased consumption of petroleum, and automobile transport. In the developed countries, this technological structure reached the limits of its development in the 1970s.

In the U.S.S.R. at that time, this technological structure was in the middle of its growth phase, but the rate of growth was lower than it had been in the capitalist countries, because the economy managed by directive lacked a mechanism for the timely shift of resources out of obsolete production technologies into new ones. Meanwhile, a new technological structure began to emerge, in both the U.S.S.R. and the developed Western countries, based on microelectronics, automation, utilization of pre-fabricated construction materials, increased consumption of natural gas as the main fuel, and a rising role for air and pipeline transport. Unlike in the capitalist countries, where the formation of this technological structure was accompanied by overall modernization, in the U.S.S.R. it took place while reproduction of the previous technological structures continued and even expanded, tying up limited resources.

The U.S.S.R. slid into a depression, as a result of these growing disproportions, and the technological gap between the U.S.S.R. and the developed countries threatened to become larger. The necessity of reform, however, by no means determined some inevitable economic catastrophe, nor did it dictate “shock therapy.” On the contrary, there were decent possibilities for an evolutionary reform of the economic system.

In the 1980s, CEMI proposed systems for the evaluation and choice of lines of scientific and technological progress, the creation of a non-state sector of the economy, reform of the legal and organizational structure of industry through converting enterprises to joint-stock companies and the development of major, mixed-ownership firms that would be competitive on the world market, the stimulation of export and heightened competitiveness of science-intensive types of production, and the gradual deregulation of prices, while control over price formation would be maintained in the highly monopolized sectors.

“It was our general view, that a shift to market principles ought to be accompanied by the creation of new opportunities for economic growth. Indeed, the creation of favorable conditions for developing private initiative, given a low degree of saturation of the consumer market and cheap pro-

duction resources, would have to entail a rapid upswing of economic activity. In order to create new growth spots, there ought to have been supplementary measures to stimulate innovational activity, reorganize industrial enterprises in the science-intensive industries into complex concerns, and implement structural reorganization programs for the economy, based on key technologies of the new technological structure-period. We viewed any economic reform options entailing a probable collapse of production in excess of 15%, as unserious and politically unacceptable.”

Based on our analysis of the technological and production possibilities, and estimates of the probable growth of economic activity in the non-state sector, we had an optimistic view of the prospects for economic reform; we anticipated net growth. An evolutionary strategy could succeed, if there were conscious stimulation of growth of output in the area of the new technological structure and the private sector; its positive effect would “outweigh” the negative consequences of the inevitable decline of production and employment in obsolete and depressed sectors.

“In other words, with an appropriate economic policy, it would have been possible to anticipate not only the amelioration of negative consequences of the transition crisis, but an upswing of economic activity in promising branches and sectors of the economy, which would have guaranteed sustained and high economic growth into the foreseeable future. Importantly, that growth would have been based largely on the key technologies of the new technological structure, on a world market scale from the outset, thus raising the competitiveness and the stability of the national economy. It is hard to estimate what economic growth rates might have been possible, under such a policy. Perhaps the inevitable decline of production in obsolete and loss-making sectors of industry would have exceeded expanded production in science-intensive industry and the service sector for some period of time, while the increase of investment in the conversion of science-intensive industry and the modernization of obsolete capacities would have restrained the growth of consumption. It is also difficult to calculate the impact of the probable influx of foreign investment, had political and economic stability been preserved during a gradual and evolutionary reform of the economy. It is clear, however, that there would have been no avalanche collapse, such as the one that occurred as a result of the chaotic ‘shock therapy’ policy.

“Modelling and estimates by the Institute of National Economic Forecasting show that, even without major changes in the institutional structure of the economy, it would have been possible to anticipate only a very slight decline of production during the first half of the 1990s.”

A sensible economic policy should have made it possible to expect a continuation of the depression with “zero growth” in 1992-94, followed by economic recovery on the basis of expansion of the new technological structure in 1995-96, and

the achievement of stable 7% per annum growth beginning in 1997. Growth rates for production in the area of the new technological structure should have been 10-30% per annum.

“The implementation of the ‘shock therapy’ strategy destroyed the contours of economic relations, which maintained the reproduction of the economy’s technological structure. The collapse of existing economic links, the explosive growth of prices, the devaluation of enterprises’ circulating capital, the steep reduction of state spending and final demand, and the spontaneous mass privatization of state enterprises, could not fail to cause an abrupt collapse of production. Enterprises were unable to adapt to such rapid, radical changes in the economic environment; they lost their ability to plan their activity, they were deprived of their traditional suppliers and markets, not to mention their ability to support an independent R&D cycle. Their natural reaction was to shut down production, refuse to pay their suppliers and the state on time, and reallocate revenues to current consumption, ceasing investment.

“At the same time, the collapse of the previously functioning contours of economic relations created possibilities to seek new potentialities for technology and production, and to master new types of product and the markets for them. Possibilities opened up for the rapid reallocation of resources out of obsolete and loss-making production, into promising technologies of the new technological structure and the formation of ‘locomotives of growth’ on this basis.”

Three ‘last chances’

There were three moments of opportunity for economic recovery, after the shock of overnight deregulation in 1992. The first came in late 1992-early 1993.

Industry had recovered from the first blow of “shock therapy” and firms were beginning to adapt to market conditions; a certain degree of order had been established in the ruble zone, and inflation had abated. The conditions for a production upswing were far more favorable than today: raw materials prices far below the world market, high competitiveness of domestic products thanks to the relatively low rate of the ruble, a lower real interest rate, and less idle productive capacity.

There was some degree of recovery, especially in consumer goods production and some sectors of machine building, which began to grow at an annual rate of 10-20%. The export of machinery rose, as the conversion of defense plants bore its first fruit. An economic policy was needed, however, that would be oriented to the interests of domestic goods producers, increased investment levels, scientific and technological progress, and the formation of the reproductive contours of the new technological structure.

There was no such policy. The artificial stabilization of the ruble’s decline, alone, reduced the competitiveness of Russian goods producers threefold between the spring of

1993 and the summer of 1995. For the sake of curbing inflation, the government—subject to no effective supervision by Parliament—resorted to non-payment for already-filled state orders and the delay of wages to budget-rostered employees. Many state programs, especially investment programs, were simply shut down, while significant budget revenues were diverted to illegally granted import duty and other tax breaks. From September 1993 to May 1994, industrial production fell by one-third.

The second chance for economic growth emerged in mid-1994, when there was a certain stabilization pause, associated with reduced inflation and the seasonal recovery of production. Science and technology had already suffered grave setbacks and much of the domestic market was lost, but there was still some possibility to stimulate growth spots. It was not exploited.

“Instead of beginning to create conditions for the revival of production after its abrupt decline, the government blindly capitulated to the IMF’s credit and foreign economic policy recommendations, refusing to pursue an active investment policy, defend the domestic market, or stimulate production. Formal planning of the money supply on the basis of primitive models, taking into account neither the structure of that money supply, the behavior of those with monopoly control [in various economic sectors], nor the structure of the gross product, in combination with the policy of artificially restraining the fall of the ruble, ended lawfully in ‘Black Tuesday’ [Oct. 11, 1994, when the ruble collapsed by 25% overnight] and the latest destabilization of the economic situation.”

The third missed chance came in the spring of 1995, when instead of action to defend the market and stimulate export and investment, the government again abided by the IMF’s recommendations and postponed long-overdue measures into the indefinite future.

Barriers to growth

The “shock therapy” policy blocks economic growth possibilities along several lines at once. First of all, strict planning of the money supply, without attention to idiosyncrasies such as non-payments and the fact that the amount of foreign currency in circulation exceeded the official money supply, led to underestimation of the rate of inflation and consequent over-restraint of the money supply. This fanned inflation, creating an artificial credit deficit and rise in interest rates. These phenomena sharply reduced investment and innovation, as credit became more costly.

Secondly, the artificial support of the ruble’s exchange rate proportionately reduces the competitiveness of domestic enterprises, subverting their possibilities to modernize and adapt to the new economic environment.

Thirdly, the steep decline in state spending, especially in any areas other than social needs, leads to a steep reduction of expenditures on scientific R&D, which adversely affects

the potential for economic growth.

Fourthly, the decontrol of prices enabled the relatively more highly monopolized raw materials sectors to hike their prices, radically shifting price proportions in their favor and undercutting the competitiveness of manufacturing industries.

“With each year that the policy of the Washington Consensus is continued, the possibilities for independent, stable economic growth diminish. The economic development trajectory assumes the form of a narrowing spiral, with consecutive cycles of production collapse, interspersed with brief stabilization pauses. As the economy is primitivized and whole sectors of our economy perish, the depth of each such cycle becomes less, moving to the limit of ‘zero growth,’ which is mistakenly viewed as stabilization. In reality, the decline of the rate of collapse is explained by the purely statistical effect of a total reduction in domestic production, which is reflected in an ever lower base from which to calculate the annual rate of collapse.”

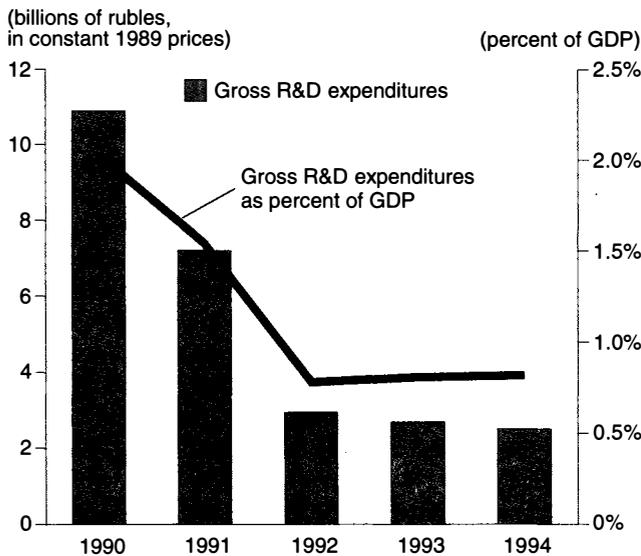
No coherent economic reproduction structure has arisen, to replace the contours of economic relations, which collapsed abruptly four years ago. The economic system has disintegrated into disparate, weakly interlinked elements, each trying independently to adapt to a chaotically changing economic environment.

Manufacturing in the area of the new technological structure suffered the most, since at the moment that “shock therapy” was implemented, it had not taken shape; these industries were limited to state demand, chiefly from the military. With the shutdown of any state structural or innovational policy whatsoever, and the steep reduction of spending on scientific R&D (**Figure 5**), these branches of production went on “starvation rations.” Their ability to adapt to the changed environment was blocked both by the surpassing rate of price rises for fuel, raw materials, and semi-manufactures, and the reduced competitiveness of their products, and by the seizure of the domestic market by foreign companies. The rapid devaluation of circulating capital and the increase in the interest rate for credit closed the door on their possibilities to attract investment for the readaptation of viable enterprises to the changed conditions—through conversion, introduction of new product-lines and technologies, or qualitative improvements.

Thus, activity for the new technological structure was simultaneously cut off from its sources of raw materials and equipment, its markets, and its sources of credit. It is not surprising, that most of these enterprises perished, either going bankrupt, or reorienting to the production of more primitive output with a short production cycle. Among the basic industries of the new technological structure, the electronics and instrument-building sectors, consumer goods production, production of automation systems, and the corresponding lines of scientific research, have been almost totally shut

FIGURE 5

Gross expenditures on scientific research and development



Source: "Rossiiskaya nauka i tekhnologiya," Center for Research on Science and Statistics, M. 1995.

down. Aerospace and nuclear energy are in a grave condition, but those sectors were able to preserve a part of their scientific and production capacity, thanks to defense orders and producing for export.

The components of the other technological structures also lost their coherence and disintegrated. Those that survived, as a rule, were those with some capability to export; they could be integrated into foreign reproductive structures. Expressed in the language of biology, the elements of the collapsed "biocenosis" of the Russian economy became a nutrient medium for external technological and production structures, which raised their own competitiveness by means of assimilating the resources of the uncompetitive Russian firms they devoured.

A few firms consolidated niches on the domestic or foreign market. These were chiefly in the raw materials industries, which faced no serious barriers to foreign markets. Manufacturing industries survived, to the extent that they had some market for their products and could secure supplementary foreign financing. Most industries producing final products have been shut down. Those from the new technological structure were almost completely annihilated by foreign competition.

This disintegration of the Russian economy has long-term, negative consequences. The domination of alien economic reproductive contours, characteristic of colonial countries, means the loss not only of economic independence, but also of internal sources for sustainable economic growth. The

destruction of industries of the new technological structure, in particular, means the loss of potential for modern economic growth. The incorporation of obsolete industries into foreign reproductive contours makes the economy vulnerable to world market conjunctures. The destruction of domestic R&D capabilities and the severance of the technological chains defining self-contained innovation cycles, mean the loss of the main source of economic growth—scientific and technological progress. We are left to consume the fruits of such progress, produced abroad, paying with exports of raw materials.

"As a result of 'shock therapy,' the Russian economy has already acquired typical colonial features. Nonetheless, the colonial structure is not yet completely consolidated, so certain possibilities remain to overcome this tendency. With those are linked our hopes for ending the depression in the foreseeable future, and shifting to sustainable economic growth. In order to exploit these possibilities, it is necessary to evaluate the situation precisely and, using the evolutionary approach and existing world experience, develop an appropriate program of action."

Our point of departure

The conditions for a transition to economic growth are less than favorable. Because of the economic disintegration, external factors predominate, such as demand for Russian products abroad, the interests of transnational companies, and access to the international financial markets. Internal sources of growth have gradually been degraded, as is especially, alarmingly, apparent in Russian science; spending on science has fallen to the levels typical for underdeveloped countries.

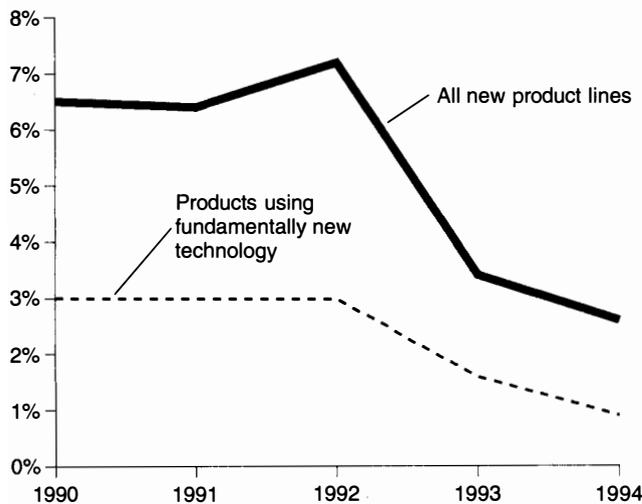
Ending an economic depression depends on the growth of a new technological structure and the diffusion of its key technologies. "Shock therapy" largely destroyed manufacturing associated with the new technological structure. The economic depression has become chronic, and is accompanied by declines in the efficiency of social production and the level of innovative activity (Figure 6), primitivization of the economic structure, and degradation of productive capacities. While the percentage of enterprises that engage in R&D was 60-70% in the U.S.S.R. in the late 1980s, it had fallen to 22.4% by 1992-94.

These features radically distinguish the Russian economy in its present state, from a classic depression, which opens up new possibilities for economic growth. In Schumpeter's words, in a classic depression there is a "constructive destruction" of the existing technological structure, which is modernized on the basis of the new technological structure-period. But today's Russian depression exhibits a pathology, characterized by chaotic collapse of the entire economic system.

With the unfavorable structural changes comes a grave macroeconomic situation. First of all, the price structure, cre-

FIGURE 6

New machine building, as a percentage of total output



Source: "Rossiya v tsifrakh: 1995. Kratkiy statisticheskiy sbornik," Short Statistical Anthology of the Russian Federation, Moscow, 1995, p. 215.

ated under pressure from the monopolies, makes almost any manufacturing or agricultural activity unprofitable or uncompetitive. By the end of 1995, prices on the fuels and construction materials most consumed in industry and agriculture were much higher than world market prices (e.g., gasoline, 1.8 times higher; steel, 1.5 times). The domestic devaluation of the ruble continued at the rate of 7% per month, while its exchange rate was kept virtually stable; thus, prices for domestic consumer goods drew even with and even surpassed the prices of imported goods.

Secondly, prohibitively high interest rates make it impossible to finance either current production, or investments for modernization.

Thirdly, the refusal to defend the domestic market even from unscrupulous foreign competition, has led to the loss of most markets for domestic products, which now comprise less than half of the goods in circulation (less than one-fifth, for consumer goods from science-intensive industries).

Fourthly, the absence of mechanisms to index income and expenditure streams for current economic activity, under conditions of high inflation, causes the constant devaluation of enterprises' circulating capital, a chronic non-payments crisis, and rising interest rates.

There are also serious problems at the microlevel. When voucher privatization ended, the lack of definition of property rights became even worse than it had been. It deteriorated further, with the introduction of new forms of quasi-free-of-charge transfers of huge units of property to the control of

private structures, which frequently are merely agents for foreign companies.

Mass privatization of state enterprises yielded no increase in the economic responsibility of the people in charge of them. Some two-thirds of all firms are controlled "from inside" by the labor collectives and executives. Around 10% of privatized enterprises remain under state control; only 20% are controlled by outside owners. The position of the latter is often undefined and vulnerable. Significant quantities of the shares of privatized firms have been bought up by dubious intermediary firms for purposes of subsequent resale. This chaotic situation breeds opportunistic behavior on the part of the executives, hindering long-term planning for the firm and investments.

The many scandals associated with privatization, financial pyramids, and so forth, have created stereotypes of entrepreneurial behavior, orienting people to the easy super-profits to be had by deceiving consumers or the state, breaking the law, bribing officials, while refraining from expenditures on the stimulation of production or labor motivation. These stereotypes help maintain the shadow economy and organized crime; they negatively affect market competition, efficiency, and socio-economic development.

At least two positive elements in our situation can be noted. One is that the general sense that we have hit bottom, that "there's nowhere more to fall," creates a certain psychological expectation of an upswing. Also, there is the relative exhaustion of possibilities for large-scale financial schemes based on the population's savings, the reduced profitability of currency speculation, and the elimination of many illegal tax and import duty breaks.

Several other elements of our situation may be noted. First, approximately one-third of our industrial enterprises have adapted to market conditions not badly, and could function independently if there were a favorable change in the economic conjuncture. Many of them have found export niches for their products, and could increase the volume of such exports, given a modicum of stimulation. Secondly, with the reduced profitability of speculative operations and the completion of the spontaneous redistribution of property, entrepreneurial energies may be redirected into the productive sphere. Thirdly, the population has basically mastered the rules of the game for the market economy, and would be able to engage in productive activity, if there were a growth of real incomes and employment. Fourthly, progressive economic legislation has been adopted in recent years; if it were strictly observed, economic stability could be increased. Fifthly, the economic crisis has liquidated a portion of our obsolete production capacities, freeing up enormous material and human resources.

These positive elements will not be exploited, if those in power continue to redistribute property and speculate with state funds, instead of solving economic problems. We need

Russian scientists warn of 'social catastrophe'

This "Appeal of Members of the Russian Academy of Sciences Dmitri Lvov, Nikita Moiseyev, Gennadi Osipov, and Boris Raushenbakh—For Russia and Its People," was issued on April 29.

The time has come when, for the sake of the country's future and the preservation of Russia as a single state, it is necessary to face the truth and to assess the socio-economic and socio-political situation as it really is.

The country is in danger; it is on the brink of social catastrophe. It is no longer able to feed itself, production is falling, the cost of resources is growing without interruption while their quantity decreases, and power is weakening—its instructions are not carried out. Russia's national security is threatened by unceasing territorial pretensions and the inevitable approach of NATO up to the borders of Russia. But the greatest danger for the country is the state of the people, their loss of confidence in the future and trust in the leadership, their sense of hopelessness.

Under these conditions, the confrontation of various social forces in Russian society, which is becoming more intense in anticipation of the elections for the Presidency

of Russia, aggravates the situation. The victory of any of the contending sides in these elections will inevitably lead to the imposition by force, on the other section of society, of demands it cannot accept. Confrontation in various forms, including armed confrontation, will become inevitable. None of the sides will want to yield its positions voluntarily. Discord and possible civil war will lead the country to collapse and ruin.

The only means of preserving the integrity and viability of the country is national conciliation, first of all between the two main candidates for the Presidency of Russia—B.N. Yeltsin and G.A. Zyuganov. This would mean drafting and signing a special document, according to which either of the contending sides, upon coming to power, would assume responsibility to preserve the democratic gains of the Russian people, not persecute its opponents or dissidents, reject the idea of political revenge, exclude violent and undemocratic methods of solving economic and political problems, and help to create a coalition government of national conciliation.

We sincerely hope, that upon the achievement of national conciliation, the burden of power and responsibility that will lie on the shoulders of the newly elected President of Russia, will be used not for purposes of vengeance, but in the name of Russia and for the good of its people. And we, scientists of Russia, are prepared to help in every way possible.

an economic policy, aimed at creating the conditions for economic growth.

The theoretical basis for a growth policy

Based on a theory of economic growth, developed by applying modern mathematical modelling methods to empirical findings from a comparative analysis of various national economies during the twentieth century, the following practical generalizations about the current state of the Russian economy may be made.

1. Scientific and technological progress is the main factor for modern economic growth. It determines 70 to 90% of GDP growth in developed countries. Other important factors are the investment of capital into "man" (education, health care, nurturing) and productive capacities, a developed legal system, stability of the macroeconomic and political environments, and a low degree of income differentiation within the population.

2. Economic growth is uneven. In each period, there are

branches and types of industry that comprise the dominant technological structure and are the carriers of economic growth. Their expansion determines economic growth rates.

3. Economic growth is global and is determined by the competitiveness and comparative advantages of each national economy. Countries without access to the technologies of the dominant technological structure will be, as a rule, in a dependent and economically disadvantaged position.

4. Periodic "great depressions" are connected with the accumulation of structural disproportions and the exhaustion of the dominant technological structure-period. They are overcome through "constructive destruction" and modernization of the existing structure of the economy, through diffusion of innovations from the new technological structure-period. These depressions are global, and those countries that are first to overcome them greatly increase their competitive advantages.

5. Each technological structure-period has a certain structure of economic institutions and forms of organization of production. Reproduction of the modern technological structure-period is characterized by the domination of global industrial-financial groups, widespread use of state regulation of world trade and stimulation of scientific and technological

progress, a developed system of state support for innovation activity, the domination of flexible forms of organization of the technological process, and significant redistribution of resources from the private sector into the public sector for purposes of developing universal education, health care, transportation and information infrastructure, and the financing of scientific research.

Application of the theory of modern economic growth to study of the Russian economy leads to recommendations, sharply diverging from the practice of the Washington Consensus, based on the ideological doctrine of radical liberalism, and so unsuccessfully applied in Russia and other countries with transitional economies. We need a new economic policy, and new forms of political support for it.

What is a 'transitional economy'?

The customary definition of a transitional economy, as an economy shifting from management by directive over to market self-organization, is inadequate. There are many types of market economy, with substantial functional differences.

The advocates of market reform usually talk about building a socially oriented market economy. This refers to the role of the state, in guaranteeing a certain level of public consumption. But a truly scientific policy requires more precise goals—implicitly the creation of a society of welfare [*blagosostoyaniye*, the “general welfare” (*obshcheye blagosostoyaniye*) of the U.S. Constitution], which ensures the free development of citizens’ talents, capabilities, and initiative, where social peace, justice, and order reign, the law is observed, the security of the state and the individual are defended, there is a high standard of living and welfare, with guaranteed respect for the democratic rights and social protection of each person, and creation of conditions for the development of society’s productive forces and scientific and technological progress.

Once such a goal is defined for economic reform, the subordinate role of the transition as such becomes apparent.

This paper will be limited to recommendations for reforming the economy, from the standpoint of creating favorable conditions for sustainable economic growth. The sustainability is to be stressed; the mere achievement of an increase in state orders or the indexation of circulating capital would not represent a satisfactory solution.

In the realm of technology, the task is to create and stimulate the growth of technology and production systems for the new technological structure, as well as the modernization of related industries. This requires competitive financial and production entities; the import of necessary technologies; stimulation of rapid diffusion of new technologies; defense of domestic markets; price relationships, advantageous to development of the new technological structure; and other economic parameters.

In the institutional realm, the task is to create an economic mechanism to reallocate resources away from obsolete indus-

tries, into the new technological structure. Privatization measures, tax policy, price and revenues policy, foreign trade regulation, financial and credit policy should all be subordinated to this task.

The same goals should shape policy for *the organization of the economy’s production structure*, promoting those organizations that will be able to develop under conditions of intense international competition.

Proposals for growth

Macroeconomic policy must create favorable conditions for solving the above-listed tasks, guaranteeing stability and a good climate for investment and innovation. At the microeconomic level, property rights must be precisely defined, to guarantee a high level of responsibility in the management of enterprises. On the basis of these obvious tasks, proposals for economic growth under current Russian economic conditions are given below. This policy divides into two components: the creation of favorable macro- and microeconomic conditions for the upswing of production, investment, and innovation, and special measures to stimulate progressive structural changes.

Concerning macroeconomic conditions, the economic depression has been explained in terms of:

- price disparities between raw materials and finished goods;
- the prolonged elevation of the ruble’s exchange rate (over the past three years, the fall in the rate of the ruble lagged fivefold behind its internal devaluation);
- the inaccessibility of credit resources for the development of production, due to their costliness;
- high inflation;
- the devaluation of enterprises’ capital;
- the reduction of efficiency, due to idled capacities;
- high taxation of the productive sector;
- the liquidity crisis and high cost of credit, caused by the state’s restrictive monetary policy;
- the state budget crisis, accompanied by a sharp rise in the state debt and the systematic non-fulfillment of government budget obligations;
- the devaluation of the population’s savings.

The rudder of macroeconomic policy measures to create favorable conditions for production.

1.1. Control over prices in the highly monopolized sectors, in order to suppress inflation.

1.2. Shift from a policy of planning the money supply, to one of targetting interest rates into a 3% to 7% real annual range.

1.3. Transition from a policy of artificially supporting the ruble, to allowing it to change in proportion to domestic inflation.

There should be tightened currency controls, requiring the conversion of all foreign currency earnings, and the elimination of foreign currency accounts over a two-year period.

There should be a strict ban on the importation and circulation of foreign currency, relaxation of restrictions on the export of rubles, expanded use of rubles in foreign trade operations, moves toward external convertibility of the ruble, and securing for the ruble the status of reserve currency in the CIS countries and eastern Europe.

1.4. Improvement of the structure of the money supply: introduction of electronic transfers, increased circulation of promissory notes, stimulation of long-term deposits by means of state guarantees, and reduction of the share of cash in the money supply.

1.5. Tax reform, providing for: reduction of the tax burden to a total level not exceeding 35%, on value added, profit, and wages; exemption from taxation of profits reinvested in production, new technologies, and scientific R&D; twofold reduction of the value added tax; shifting of the tax burden from low-income citizens to those with high, or super-high incomes. The reduced taxation of current incomes is to be compensated by expansion of the tax revenue base, as a result of scaling back the "shadow economy" and of the general recovery of production; increased taxation of socially and ecologically harmful types of activity, speculative operations, and incomes from property; liquidation of all exemptions from paying customs duties, the value added tax, or excise taxes on imports; higher taxes on imported luxury goods; and, the activation of non-tax sources of budget revenues. Natural rent for the exploitation of raw materials is of particular importance.

1.6. Defense of the interests of Russian goods producers, engaged in foreign trade: customs duties and non-tariff restrictions, to eliminate unscrupulous foreign competition; re-establishment of strict quality control on imports; elimination of all tax abatements for foreign capital; limitations on foreign investment in national security sectors (the defense industry, raw materials deposits, telecommunications, trade, finances, the electric power industry, etc.); creation of a customs union with the CIS countries, in which Russia would have the leading role.

1.7. Lower inflation, by means of standard monetary instruments, as well as price controls for the natural monopolies and the elimination of mafia structures that control the market.

Macroeconomic conditions alone are insufficient to launch economic growth. There will have to be special measures to raise productive capital investments. These include:

2.1. Strict limitation of the issuance of securities, for investment purposes only.

2.2. Formation of special financial institutions for development, ensuring a flow of credit into production.

2.3. Exemption from taxation of profits, reinvested in the financing of capital investments and scientific R&D.

2.4. Introduction of a monitoring system for the movement of enterprises' amortization funds, and their use for investment purposes.

These macroeconomic and investment-promoting mea-

asures should be supplemented by measures to stimulate demand, restore the population's savings and the circulating capital of the enterprises:

3.1. A program to restore citizens' savings accounts, which were devalued by inflation.

3.2. State purchases of large quantities of equipment with a long production cycle, for subsequent leasing to commercial organizations (aircraft, ships, agricultural implements, mining equipment, computer centers, etc.).

3.3. Indexation of the circulating capital of commercial organizations, including depreciation allowances; promotion of diverse forms of payment to improve the structure of the money supply; mutual off-setting of obligations, to reduce non-payment levels among enterprises.

At the microlevel, the main problem remains the motivation of effective management of property.

4.1. An inventory should be taken of the results of privatization, with cancellation of illegal acts that clearly harm the national economy, and the final affirmation of property-owners' rights at the remaining enterprises. The possible restoration of state control should be limited to the natural monopolies, defense industry, the fuel and energy sector, and narcotics production.

4.2. Strict defense of legally obtained property.

4.3. State supervision of the exchange of land, through a network of land banks.

4.4. Introduction of strict responsibility for the effective management of state property.

4.5. Tightened norms of responsibility of employees to shareholders, labor collectives, and the state, for the effective management of corporations and their property.

4.6. Creation of conditions for the efficient organization of industry and the integration of finance capital and industrial enterprises, including by the elimination of barriers to simultaneous participation in the ownership of financial and production structures, mergers of producing enterprises, scientific and engineering, and financial organizations, and the stimulation of the formation of industrial-financial groups.

4.7. Decriminalization of economic activity, by means of strengthening state protection of property, improving court arbitration of disputes, and introducing strict responsibility for fulfillment of contract obligations and repayment of credits.

Special measures

The effective bankruptcy of the majority of enterprises is a separate problem. An estimated one-half to two-thirds of industrial firms rate their situation as poor or very poor. There will have to be special state measures to clear up the finances of loss-making enterprises and to cultivate competitive production structures. For efficiency's sake, this must be closely coordinated with scientific and technological, industrial, and structural policy.

The state's scientific and technological, industrial, and

structural policy should comprise special measures to restructure the economy, on the basis of disseminating the technologies of the new technological structure. This means abandoning the notion of the state as a sort of superstructure over an economy of autonomous subjects, engaging in economic activity and consumption. In a modern market economy, the state carries out the internally important functions of stimulating *development* and the growth of [people's] *welfare*. For this purpose, the state must not only provide for the normal functioning of market competition and defend the legal rights of citizens and enterprises, but also assist enterprises in adapting to the changes and fluctuations of the market conjuncture, and create conditions for the development of production, financing a part of the expenditures for major-impact common undertakings, above all scientific research, education, health care, information and transportation infrastructure, and the promotion of innovation.

One necessary attribute of state development policy is a system of indicative planning and long-term state programs for the modernization of the economy, scientific and technological progress, and raising the popular welfare.

Special measures for economic restructuring should include the following.

First, to bring about a positive impact of the economic crisis on structural changes in the economy. The reduction of economic activity should not lead to shutting down progressive manufactures in the area of the new technological structure, but allow the culling of obsolete industrial facilities and clear the ground for economic growth on the basis of modern technology.

Second, the avalanche-style destruction of the country's scientific and technological complex must be halted. Conditions must be created for the preservation of the trained personnel, knowledge, and technologies, and their use to expand the new technological structure and work in anticipation of the subsequent one.

Third, the state's structural policy should correspond to the comparative advantages of the Russian economy, as well as to the objective directions of global economic and technological development.

Fourth, in carrying out state structural policy priorities, conditions should be created for the subsequent growth of private investment, and an economic upswing on the basis of bringing new, promising technologies on line.

Fifth, it is important to create competitive economic organizations, able to function on the domestic and world markets, and to concentrate resources on the most promising lines for renovation of manufacturing.

The measures adopted for these purposes are not limited to direct state intervention (programs, state orders, budget allocations); on the contrary, they should support a broad range of private initiative.

The state should both protect promising industries from destruction and create conditions for their growth during an

unfavorable macroeconomic conjuncture, as well as help to free up capital and labor from obsolete industries, and reconfigure the relevant production capacities. This dual task requires the following economic policy measures.

Measures to preserve the scientific and technological potential of industry:

- defense of state spending on scientific and technological progress, against devaluation and cuts; legislation to set the scientific R&D portion of the budget, at no lower than 3% of GDP; increased state subsidies for scientific research, and the exemption of scientific R&D spending from taxation;
- special measures to stimulate innovation, by means of state support for high-risk projects;
- transition from financing of scientific organizations, to the financing of scientific R&D on a competitive basis, in accord with the priorities for establishing the new technological structure;
- preservation of the scientific information infrastructure, maintenance of a network of scientific and technological libraries, subsidies to scientific research organizations for the use of information networks and data bases, and the acquisition of foreign literature;
- support for experimental industries and testing;
- active recruitment of the scientific and technological potential of CIS countries into joint work on priorities for scientific and technological progress;
- subsidies for the defense of intellectual property rights in Russia and abroad.

Measures to preserve and develop the technological potential of industry:

- federal programs for the development and diffusion of key technologies of the new technological structure;
- stimulation of technology transfer from military to civilian industry;
- promotion of technologies, which will give Russian firms competitive advantages on the world market;
- development programs for areas with a high concentration of scientific and technological potential (science cities);
- state assistance to infrastructure that promotes the commercialization of the products of scientific R&D;
- use of state purchases of advanced equipment, to be leased for the acceleration of retooling of fixed capital;
- subsidies for the import of new foreign technologies;
- stimulation of the export of manufactured goods.

At the same time, state-subsidized enterprises and branches of industry should be reconfigured and modernized, if their activity is deemed economically ineffective.

The effectiveness of such restructuring depends on the correct choice of priorities. From a scientific and technological standpoint, the priorities should be the most promising directions of the new technological structure and preparation for the next one. State support for these areas should be marked by 1) its effect on improvement of the economic and business environment; 2) a multiplicative effect, initiating

business activity growth in a broad array of sectors, connected with the priority areas of manufacturing. The state should promote the growth of competitive industries, in such a way that at a certain point, they make their own way on the world market, becoming “locomotives of growth” for the whole economy. From a social standpoint, these priorities in re-structuration should be accompanied by the growth of employment, rise of real wages and skills levels for the working population, and a general increase in the people’s welfare.

Among the priority directions would be:

- renewal of the civil aviation fleet, where wear and tear has reached a critical point, and where the capability exists to produce new-generation aircraft;
- renewal of equipment at electric power stations, where wear and tear is approaching critical limits;
- modernization of rail transport management systems, making possible a significant increase in traffic capacity and on-time delivery of freight;
- production of modern flexible equipment for the automation of agricultural production;
- development of modern transport junctions: seaports, airports, railroad stations, and road bypasses, making it possible to improve the speed and reliability of total freight shipments;
- development of modern housing construction;
- development of information infrastructure, employing satellite and fiber-optics communications;
- modernization in the non-productive sphere, on the basis of domestically produced equipment (medical diagnostic equipment, computer technology for education, etc.);
- cleaning up the environment, by means of modern, ecologically clean technologies.

In view of the extreme militarization of Russia’s science-intensive industry, state support for defense industry conversion is a necessity. All the instruments of state policy should be employed: state purchases, allocations for scientific R&D, preferential credits, credit guarantees including for export, stimulation of the creation of competitive industrial-financial groups, subsidies for the import of technology.

Competitive advantages

State economic policy should be oriented to *realizing the competitive advantages of Russian industry*. World experience shows that successful structural economic changes rely on support for those areas of the national economy, capable of promoting economic growth on the scale of the world market. Among Russia’s competitive advantages are:

- cheap labor, with a high skills level;
- low relative capital requirements in the scientific R&D sector, with relatively developed infrastructure for experimentation, and R&D already done in several areas;
- a long Russian presence on the machinery and equipment markets of a number of countries;

- significant idle production capacities, which can gear up production for export at relatively low cost;
- unique state-of-the-art technologies in several sectors of industry, which could provide for the expansion of competitive exports.

Among the blocks to realization of these competitive advantages are:

- the virtual absence of financial, organizational, or information infrastructure to support competitive Russian exports or the rationalization of the structure of imports;
- changes in the world geopolitical configuration, leading to loss of traditional markets for Russian products;
- the West’s protectionism;
- concentration of the most competitive industries in the military-industrial complex;
- low efficiency of production and extremely high proportional material costs;
- low efficiency of industrial organization;
- domestic demand that rapidly degenerated with the evaporation of state orders for science-intensive products.

Under these conditions, a strategy for realizing Russia’s competitive advantages includes several aspects.

1. *Stabilization of traditional machinery exports*, including by means of state support for project assistance abroad. To guarantee the capital raised for such purposes, the long-term debt of developing countries to Russia could be converted into the real assets of enterprises built with Russian assistance.

2. *The realization of competitive advantages*, connected with the cheapness of labor, productive capital, technological know-how, and material resources. This strategy could be implemented in Russia as follows:

- preservation and development of energy- and metal-intensive machine-building, including components and semi-manufactures made of non-ferrous metals and steel;
- mastery of types of production, already accomplished in developed countries—chiefly consumer machinery (light cars, household appliances), various equipment for light industry and the food industry, and equipment for trade;
- creation of assembly plants for components, imported into Russia;
- creation of firms to commercially exploit the available scientific and technological capacities of Russian high-technology enterprises and design organizations;
- placement of orders in Russia for technological and design work, applied scientific research, experiments, programming, and other types of science-intensive services, in areas where Russia has skilled personnel and world-class achievements.

3. *Realization of the dynamic competitive advantages, embodied in high-technologies*.

There are several sectors of Russian industry and services, which possess unique high technologies and could become

export leaders: aerospace, the nuclear industry, shipbuilding, space services, and computer programming. Developing the export potential of these and other science-intensive sectors will not only help the whole Russian economy, but is necessary to save these sectors.

The integration of these sectors into the world economy will allow several priority tasks of industrial policy to be solved, as the expansion of science-intensive industries and bringing them up to standards for export, stimulates technological changes in related industries. They will become the engines for progressive structural shifts in industry. But for these sectors to be brought into the world division of labor, two difficult problems must be solved.

First, our military-industrial complex is heavily materials-consuming and power-consuming; many Russian technologies, recalculated at world market prices, would be priced out of the market. Some links in the technological production chain may need to be replaced or upgraded, which, in turn, requires interfacing with the global market for certain intermediary products, as well as finished goods.

Second, Russia's competitive advantages are concentrated in sectors and markets (weapons, fuels, aerospace) where state-supported Western competitors act with particular zeal, and with a direct relationship to the geopolitical interests of the leading Western nations. It will require active political support and trade policy measures, to enter these markets.

The top priority should be to exploit the competitive advantages, embodied in the unique technologies we have. State support should be focussed on the relevant sectors, not only to attract investments and intellectual resources, but to make them the pivot of an organizational structure of industry, industrial-financial groups, export syndicates, and science and production consortiums.

Given our industrial collapse and underdeveloped market infrastructure, it is imperative that the state direct the process of enhancing competitive advantages. This implies a range of *industrial policy measures*.

1. The state should invest in science and new technologies, training and education, the infrastructure and information networks, and should provide tax credits and other stimuli for investment. The state should defend the intellectual property of Russian goods producers, including by subsidizing the patenting of their inventions abroad.

2. The state should act to improve the structure of total demand, with the institution of new standards, competitive bidding for high-technology contracts, monitoring of innovations abroad, and granting of tax abatements to enterprises investing in new technologies.

3. The state's investment in infrastructure, attraction of foreign capital, promotion of the most efficient enterprises, etc. are of great importance.

The indispensable state support should coexist with market mechanisms, without undercutting or suppressing them—

contrary to the vulgar counterposition of plan and market, traditional for both the radical liberals and the communists. State regulation is a delimited component of a modern market economy. It is naturally more accentuated in a transitional economy, due to the state's leading role in organizing the processes of transition.

In our own experience, spontaneous deregulation of the economy did not yield free competition as the motor of a market economy. Rather there was a merger of business layers with state power structures, and a carving up of spheres of influence among the most powerful groups in the regions, which led to increased weight for the shadow economy. Power became concentrated in the hands of the best organized groups, which could combine capital with access to state power and influence in the criminal world. This led to the worst sort of monopolies, suppressing honest competition and paralyzing state law enforcement agencies. Our new monopoly structures resemble monopolies in feudal society, based on state privileges. They rule the market, cannot be combatted by legal means, and tear up the nation's economic space into closed regions and areas of activity.

It would be naive, to think that the further reduction of state regulation could solve this problem. It will require persistent efforts in the area of legislation (on competition, price formation, and contract law, with strict penalties for violations), the court system for hearing economic disputes, and the development of business ethics through the creation of various entrepreneurial clubs and associations for this purpose.

The state system of economic management also needs to be overhauled. Its need to concentrate on socio-economic development, setting priorities, and carrying out the above-mentioned tasks, has little in common with today's practices of chaotic and subjective allocation of preferential credits and subsidies. The number of state economic agencies should be limited to a few ministries (finance, industry and foreign trade, power, transport, education, health care, labor and social policy, communications) and committees (socio-economic forecasting, anti-monopoly regulation, national resources, etc.), for functions that cannot be handled on a market basis.

The main areas requiring state support are science and technology, education, social protection, regulation of labor relations, market regulation, access to non-renewable resources, transportation and information infrastructure. Many of these functions cannot be left to private interests, without harm to society; they require state participation.

In particular, the state should provide much of the financing for scientific R&D, in the absence of motivation for firms to do so; the development of high-technology industries, with export potential; and the retraining of personnel formerly employed in now obsolete industries.

The size of state property that remains, mandates special functions to manage it. The relevant ministries should be

made responsible to utilize this property as profitably as possible.

The state also has a duty to protect the rights of businessmen, property-owners, and consumers, and to curb unscrupulous business activity. This entails functions of the courts, licensing and arbitration agencies, and others.

It is important to coordinate the activity of government agencies, subordinating their work to the achievement of overall goals. This requires use of the special purpose program principle, in planning their work. The components of this approach include: long-range economic forecasting, indicative planning of probable technological trajectories, identification of key economic development problems, and the choice of priorities for economic and scientific and technological development.

Colonial economy, or growth?

Estimates by the Institute for National Economic Forecasting show that if current economic policy is continued, the depression will be prolonged, while the symptoms of a "colonial" economy become chronic. There will be no internal sources for development. If, however, there were a shift to an active growth policy, it would be possible to return to greater than 4% per annum growth.

In combination with the scenario for stimulating the growth of the new technological structure and active state support for scientific and technological progress, these calculations make it possible to anticipate sustainable economic growth at 7% per annum in 1996-2005. The pre-crisis standard of living could be restored by 2005, but on a qualitatively new technological and economic basis. It is important for economic growth to be based on new technologies.

The problem of practical action

"The main problem of economic policy today, is the striking contradiction between the theoretical recommendations of our scientists, and the real actions of the authorities. Despite the amazing similarity of the constructive criticism and proposals of many Russian scientists, economic leaders, and businessmen, the government continues passively to implement recommendations and conditionalities from the IMF and foreign creditors, following the primitive policy of passive adaptation to the continuing collapse and ever-deeper depression. Unfortunately, judging by the main programmatic documents—the President's Message to the Federal Assembly and the Statement of the Government and the Central Bank to the International Monetary Fund—economic policy will not be significantly changed this year.

"In place of analysis of the reasons for the failure of the restrictive monetary stabilization programs carried out so far, the latest mystical interpretations of what has happened are now coming out. In particular, there is propaganda for the

myth of a three-phase entry into the market, which is supposed to be taken on faith; according to this myth, after the stages of deregulation and stabilization, which are supposedly inevitably accompanied by a deterioration of the economic situation, just as inevitably there comes 'the third and final stage of establishment of a market economy—stimulation of production and investments, rising efficiency, large-scale restructuring of the Russian economy' [quoted from the President's 1996 Message].

"The concrete economic policy lines, planned for this year, differ little from previous years, and no doubt likewise will depress economic activity, further degrading the real economy and continuing the collapse of production.

"This applies, in particular, to the measures laid out in all the official documents (including the President's Message) for lifting export tariffs on oil and natural gas, maintaining a stable ruble exchange rate regardless of the rate of inflation, and lifting restrictions on the export of national capital, including the placement of Russian government securities on overseas markets. The first of these measures will deprive the federal budget of 22 trillion rubles, already calculated as natural rent revenues (which will mean a corresponding deduction from spending on social needs, science, defense, etc.); this will undoubtedly send fuel prices higher, driving a new round of inflation. The inflationary effect of this measure will be aggravated by the planned increase in excise taxes on fuels, which will not, however, compensate for the budget losses from the removal of export tariffs, since the collection rate is very poor for excise taxes. The second measure will cause a further fall in the competitiveness of Russian goods producers, which already declined twofold last year, and will further facilitate the displacement of Russian products by imports, which already comprise more than half the consumer goods market. The third measure is nothing less than capital flight, which hitherto everybody, including the President, has recognized as an obvious evil and one of the key problems. The fourth measure means a new stage of building up the foreign debt, which as it is has become the world's largest. Taken together, these measures will stimulate a further growth in price disparities, with an increase of fuel and raw materials prices and lower prices on imported goods. They essentially contradict the declarations, contained in the President's Message, of intent to stimulate high-technology industries, save the scientific and technological base of the military-industrial complex, and defend the domestic market.

"Judging by the actions of the government in recent months, the priority direction remains the rapid buildup of state debt by means of the expanded emission of state securities, despite the clearly depressive consequences of this policy. In particular, the recent sharp increase in the return on newly floated state securities and loans, against the backdrop of lower inflation, will lead to a rise in interbank interest rates, which means that credit becomes even more expensive, productive investments inevitably decline, their collapse ag-

gravated by the shortage of credit resources—diverted into servicing the budget deficit—such a policy artificially creates. The super-high return on short-term state bonds is profitable for the banks that purchase them, but ruinous for the state budget, which will have to start paying already this year for the state bonds issued, plus interest. This will inevitably cause a sharp reduction in budget spending and a breakdown of budgeted payments during the second half of the year, which will lead to the latest destabilization, reduction of state-sector workers' incomes, deterioration of the financial situation of employees at enterprises that fill state orders, and a deeper collapse of production.

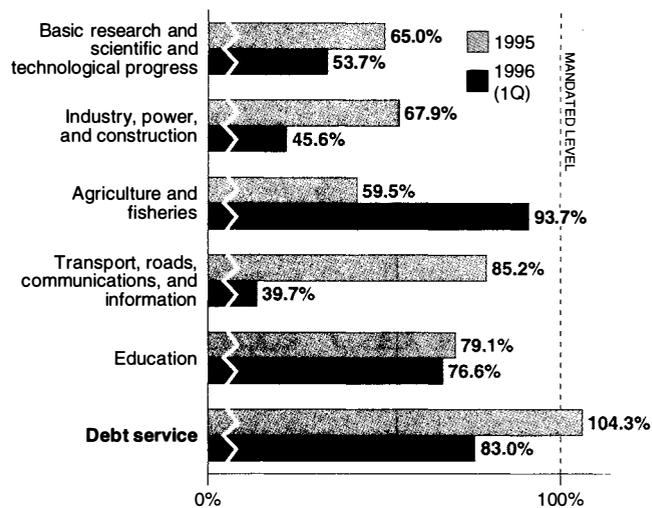
“Other measures, recommended by the IMF and adopted by the government for implementation, will also deepen and prolong the depression. These are, in particular: the approach of domestic oil prices to world prices; the increase of certain tax rates; the increase of utilities fees; the abandonment of state property in loss-making enterprises; the virtual elimination of the industrial-sector investment funds; drawing the population's savings into financing the budget deficit; the further deregulation of imports and abandonment of generally accepted, worldwide, instruments for the protection of the domestic market; expansion of the market for state bonds and the buildup of an extremely expensive state debt; rejection of assistance to enterprises and banks for the solution of mutual non-payment problems; mandatory lifting of any price or trade regulation at the local level; and other measures, which the government pledged to adopt, in the above-mentioned Statement.

“As in the past, economic growth, raising the standard of living, increasing labor productivity and the efficiency of production, reducing unemployment, expanding the market for Russian goods on the domestic and international markets—do not figure among the goals of government policy, indicated in the Statement to the IMF. Instead of these goals, which are obvious even from a common-sense standpoint, there are again only implementational goals, important to ensure monitoring of the government's policy and favorable conditions for foreign capital. This approach is affirmed by actual federal budget spending practices, the divergence of which from what was planned in the relevant legislation reflects the government's real priorities. **Figure 7** shows that the government's top priority is debt service, while expenditures that are most appropriate from the standpoint of ensuring economic growth, are not actually prioritized, but effectively are financed ‘with the leftovers.’

“The natural consequence of continuing the Washington Consensus policy is a continued collapse. Official data show that in the first quarter of 1996, the collapse continued to deepen, and the nation's economic structure to degenerate. In February 1996, GDP was 3% below the February 1995 level, while industrial production dropped 4%; consumer goods production, 6%; and production in the machine-building and chemicals industries, 17%. In consumer machine-building

FIGURE 7

Actual allocation of federal budget funds, as a percentage of the level mandated by law



Source: Russian Federation Counting Chamber data (N 01-32/15 and N 01-174/15).

and high-technology industries, the collapse was above 30% for many products. After the many-fold collapse of production in previous years, this means the virtual disappearance of the sectors of industry that are most important for modern economic growth. The volume of capital investments was down 10%, while the number of officially registered unemployed rose by 40%.

“But the recovery and upswing, mentioned in the Message, are actually possible. Just as they were in 1993, in 1994, and in 1995. But just as they remained unrealized earlier, they will not happen this year if the Washington Consensus policy is continued. Unless, of course, the Washington Consensus is replaced as the foundation of our state's economic policy by a Russian one—developed on the basis of broad public accord on the main goals, priorities, and economic policy instruments of the Russian government. Unlike the Washington Consensus, which is oriented to ensure transparency and favorable conditions for the work of *international* capital in any country, the *Russian consensus* in formation is oriented toward ensuring favorable conditions for the development of *Russian* enterprises, raising the welfare of *Russian* citizens, and an upswing in the *Russian* economy. This consensus is being formed on the basis of the careful study of Russian and international experience in overcoming economic depressions, the laws of modern economic growth, the peculiarities of our economy, and its competitive advantages. Its theoretical basis has been defined in works by scientists from the Russian Academy of Sciences in recent years, which provide a precise enough concept of a theory of economic growth, under conditions of transition from a directive to a market economy.”