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# THE SOVIET ECONOMY UNRAVELS: 1985-91

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## SUMMARY

When Mikhail Gorbachev came to power in March 1985, he promised to first revive and then transform the creaking Soviet economy. Instead, he set in motion many of the forces that led to the unraveling of the centrally planned economic system and his own political undoing.

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Initially, Gorbachev set out confidently to clean house in the economic bureaucracy, restore discipline in the workplace, and curtail alcohol consumption. Soon afterward, he launched an ambitious program to modernize the Soviet industrial base by boosting investment, especially in high-technology machinery. While these policies met with some initial success in 1986-88, they were badly flawed in important respects. The sharp increases in investment required for modernization, coupled with a failure to cut defense spending, left few resources available for consumer needs. In addition, a rapid climb in the state budget deficit starting in 1986 pumped money into the economy at rates that outstripped the growth of real output. In 1987, moreover, Gorbachev announced an economic reform package that relaxed central controls over the production and distribution of output and the setting of prices and wages. The implementation of these reforms in 1988-89, when budget deficits had become massive, led to a combination of open inflation in some prices and shortages as a result of the extensive price controls that remained in place.

When consumers became increasingly frustrated over these worsening shortages and the erosion of their already low living standards, Gorbachev belatedly shifted resources toward consumption. He jettisoned his modernization campaign, finally began to cut defense outlays, and stepped up imports of consumer goods by incurring a large hard currency debt. As the condition of the Soviet economy deteriorated in 1989-90, the government and legislature began to consider a series of increasingly far-reaching reform programs, including the delegation to the republics of greater authority and financial responsibility for economic policy on their territories. The program endorsed by Gorbachev in October 1990—which was not the most radical alternative considered—called for the gradual removal of state controls over output and prices; the sale or transfer of property to owners other than the state; and the eventual convertibility of the ruble to hard currency.

This program was rapidly overtaken by events. Consumer frustrations—now aired openly thanks to glasnost—became a growing political burden for Gorbachev. Moreover, the central government's willingness to delegate limited powers to the republics was quickly overwhelmed by republic demands for greater autonomy and, in some cases, independence. Meanwhile, the power of the traditional establishment—including industrial ministries, the Communist Party, and the military—was eroding rapidly. By the spring of 1991, Gorbachev had lost his battle to reassert central authority; only the terms of surrender remained to be negotiated.

#### INTRODUCTION

With the erosion and finally the collapse of Communist rule in the Soviet Union, an economic system unraveled. Mikhail Gorbachev assumed power in March 1985 promising to first revive and then transform an economy characterized by slow growth, mediocre technology, and an increasingly apparent inability to respond to the changing demands of the population and compete in world markets. By 1990 the economy was clearly in worse shape than when Gorbachev became general secretary. The reasons for the de-

teriorating economic performance will be debated long into the future. The discussion will not get far, however, without some agreement on the timing, extent, and sectoral composition of the deterioration. Moreover, the analysis of prospects for the new states that once were part of the Soviet Union and an appraisal of their economic performance needs to begin with some sense of where they were when they gained their independence.

This paper therefore describes the major trends in Soviet economic performance from 1985 through 1991, when the union dissolved. Much of the basis for the description of trends at the all-union level is the set of estimates of gross national product (GNP) developed by the Central Intelligence Agency (CIA) and published periodically under the auspices of the Joint Economic Committee.<sup>1</sup> The accounting framework for these estimates was devised to provide calculations of Soviet GNP in a disaggregated format when the Soviet Union published figures only on material production, and that in very little detail. More important, the CIA and other Western estimates were undertaken in the belief that many of the numbers furnished by the Soviet statistical agency were seriously flawed. Official macroeconomic indicators overstated real growth and understated inflation, and the prices of goods and services did not reflect relative resource costs or the possibilities of substitution in production or consumption. The CIA's estimates attempted to sidestep or correct these deficiencies.<sup>2</sup> Satisfactory measures of the growth of GNP at the republic level, however, are not yet available. The analysis of economic trends in the republics in this paper is instead based on official statistics on the growth of net material product, with some discussion of the shortcomings of this approach.

After the torrent of criticism of Soviet statistics by Soviet citizens under glasnost, it may be fair to ask whether any estimates of Soviet economic growth that are based on these statistics are credible. We believe the estimates presented in this paper can be used in the analysis of Soviet economic history because:

1. Most of the attacks on the figures provided by the State Committee for Statistics (Goskomstat) center on the deficiencies of value statistics in supposedly constant prices; the estimates in this paper rely overwhelmingly on reporting on quantities of production or consumption, which we believe to be reasonably reliable.<sup>3</sup>

<sup>1</sup> The GNP estimates have appeared in joint CIA-DIA testimony before the Joint Economic Committee of Congress (JEC) as well as in the compendia on the Soviet Union sponsored by the JEC every few years. The most detailed discussions of the basis for the estimates can be found in two special studies prepared for the JEC: *Measures of Soviet Gross National Product in 1982 Prices* (Washington: US Government Printing Office, 1990), and *USSR: Measures of Economic Growth and Development, 1950-80* (Washington: US Government Printing Office, 1982).

<sup>2</sup> The estimates of GNP growth are built up from detailed Soviet statistics on the production and consumption of individual goods and services. Because the vast majority of these detailed statistics are reported in physical units, this procedure avoids most of the overstatement of growth imbedded in official macroeconomic indicators. Moreover, the base-year GNP estimates (which serve as weights for the calculations of growth) are adjusted for many of the distortions of Soviet prices. In this adjustment, GNP by sector of origin in established prices is converted to a factor cost basis by subtracting turnover taxes and profits from value added in each sector and adding subsidies and a charge for fixed and working capital. To obtain GNP by end use at factor cost, the factor cost adjustments for each sector of origin are distributed among the various end uses with the help of an input-output table.

<sup>3</sup> Until it was renamed and reorganized in 1987, the Soviet statistical agency was known as the Central Statistical Administration.

2. The attacks mounted against official statistics on the physical production and consumption of goods and services have not been well supported, especially as they relate to bias in trends as opposed to levels.<sup>4</sup>

On balance, we judge that the reporting on physical production that came up through the Goskomstat system through about 1990 was sufficiently accurate to support the estimates of GNP that have been made according to CIA procedures over the years. According to Russia's Acting Premier Yegor Gaydar, this continues to be true of Russian statistics on physical output.<sup>5</sup> By 1991, however, as central authority (and with it the authority of Goskomstat) weakened and the number of transactions outside state channels grew, even Goskomstat's physical production statistics became increasingly suspect.

There is also the question of the impact of the thriving second economy during this period and earlier. Much of the activity in the second economy (bribery, thievery, prostitution, drug trafficking, and the like) either does not affect the real output of goods and services or is excluded from GNP by convention on the grounds that it is illegal. Nonetheless, the second economy does produce goods and services that to some degree have made up for the shortfalls of the state sector in satisfying the population's demand. The home manufacture of alcoholic beverages and the private provision of repair services are leading examples. The most that we can say is that the inclusion of second economy activity not captured in our estimates would clearly raise the level of GNP and probably increase its rate of growth, especially in trade and services.

#### MAJOR TRENDS IN PERFORMANCE AT THE UNION LEVEL

The readers of successive Joint Economic Committee compendia on the Soviet economy since the 1950s will be familiar with the story told there of growing weakness evidenced in declining rates of growth, sharply falling productivity gains, and a wide and probably increasing gap between Soviet and Western levels of technolo-

<sup>4</sup> The partial economic reforms and the reduced role of central planning during the Gorbachev period could have affected reporting of physical production in various ways. (See James Noren, "The Soviet Economic Crisis: Another Perspective," *Soviet Economy*, January-March 1990, pp. 5-6.) Overreporting of output may have declined because:

- Enterprises, no longer required to meet production targets handed down from above, had less incentive to overstate production.
- In 1987-88, the introduction of stricter state quality control may have raised the average quality of a given product.
- The disarray in the state supply system and the increasing importance of barter may have inclined enterprises to conceal some production from union, republic, and local authorities in order to have some goods to trade.
- During the early Gorbachev period at least, the authorities tended to take a sterner view of falsification than they had under previous leaders.

On the other hand, overreporting of physical production may have increased at times because:

- When enterprises were converted to self-financing in 1988, they had an increased incentive to lower quality standards so as to increase profits under fixed prices.
- When the leadership resorted to campaign tactics (the high technology drive of the early Gorbachev years, the program to increase production of consumer goods and convert defense industry to civil production), the enterprises may have tried to exaggerate their production of the targeted output where they could.

<sup>5</sup> Asked whether the information he is receiving is objective, Gaydar replied that the reporting on physical indicators "has in principle always been good quality, and remains so now," while acknowledging that there is now less reason to try to exaggerate production (*Izvestiya*, 6 June 1992, pp. 1, 3).

gy. During this period institutions that planned and administered the economy changed little, and policies that successive governments adopted to improve matters proved to be marginal changes at best.

#### POLITICAL AND POLICY MILESTONES

The Gorbachev era was different, often spectacularly so. In broad terms his tenure was marked first by an emphasis on accelerating economic growth and modernizing the Soviet industrial base, then by the adoption of increasingly far-reaching economic reforms and a turn toward the consumer, and finally by attempts to stabilize an economy (and a country) that was slipping out of control and performing progressively worse (see Appendix for list of milestones).

After setting out confidently to modernize the socialist economic mechanism, the leadership found that cleaning house in the economic bureaucracy and trying to restore discipline in the workplace had only a short-lived effect on production. A strategy that relied heavily on boosting investment and force-feeding high-technology sectors in an effort to accelerate economic growth did not pay off on schedule. At the same time, the diversion of resources toward investment while maintaining the military's share of national product gave short shrift to consumer needs. Gorbachev's gamble that the population would wait until his modernization program permitted an acceleration in the output of consumer goods and services failed, and his belated attempt to redirect resources away from investment and defense programs proved to be excessively disruptive.

Meanwhile, the expenditures required to support state programs were not offset by budget revenues. The sudden climb in the state budget deficit that started in 1986 led to an expansion in the money supply that outstripped the growth in real output. As inflationary pressures intensified, the government struggled to formulate a macroeconomic stabilization program. Now, however, economic policymakers had to contend with a U.S.S.R. Supreme Soviet and an increasingly articulate citizenry who resisted attempts to reduce food subsidies and contain wage increases.

In June 1987 Gorbachev put forward a package of economic reforms that gave enterprises some new authority to make decisions about the mix of their output and set some prices and wages. Although this package contributed to the weakening of central controls, it stopped considerably short of eliminating state controls over production and distribution, freeing prices to respond to market signals, and permitting private ownership. When these reforms failed to achieve the desired results, the Soviet government and legislature, starting in the fall of 1989, began to consider a series of increasingly far-reaching changes in the economic system, including private ownership and the eventual elimination of price controls. The program that Gorbachev embraced in October 1990—which was not the most radical alternative considered—called for the gradual removal of state controls over output and prices; the sale or transfer of state property to shareholders, labor collectives,

and individual owners; and gradual movement toward making the ruble convertible to hard currency.<sup>6</sup>

Significantly, these evolving reform programs gave the republics increasing authority and financial responsibility for economic activities on their territory, especially in consumer-oriented matters. The central government's willingness to delegate limited powers, however, was quickly overtaken by the demands of republics and even regions for greater autonomy and, in some cases, independence. Central authority was further eroded by flare-ups of long-suppressed ethnic conflicts and the efforts of republics and smaller regions to insulate themselves from the growing disarray in the economy. By the spring of 1991, Gorbachev had lost his battle with the republics. What remained to be negotiated were the terms of surrender—a process that the perpetrators of the abortive August 1991 coup tried but failed to avert.

#### GNP BY SECTOR OF ORIGIN

By the time Gorbachev assumed office, Soviet economic growth had subsided to the point that in 1984–85 it had almost stopped in per capita terms (Table 1).<sup>7</sup> He devised policies and a new five-year plan (1986–90) with the goal of restoring the rates of growth that the Soviet Union had enjoyed in the 1970s and earlier decades. After some initial success in 1986–88, helped greatly by a rebound in agriculture in 1986 and faster growth in industry and construction, the Gorbachev program failed. By 1989, production had turned down in industry, construction, and transportation. In 1990, the slippage became more general and more severe. When the country fragmented in 1991, the economy did likewise, and recession turned into a downward spiral.

#### *Industry*

Because the Gorbachev program relied so heavily at first on industrial modernization and revival, it is worth looking at industrial performance in greater detail (Table 2). The initial emphasis on industrial modernization and investment resulted in a spurt in the production of civilian machinery and construction materials in 1986–88. Although the targets for production of advanced technology were not met, output of computers, numerically controlled machine tools, and robotics showed impressive gains. The investment-oriented strategy did not halt the ongoing slide in the growth of industrial fixed capital, however. Nonetheless, productivity gains in industry in 1986–88 reached their highest level since the 1960s. To this extent, perestroika enjoyed an early success in industry. The turnaround is evident in measures of the productivity of both labor and capital in industry:<sup>8</sup>

<sup>6</sup> For a thorough discussion of economic reforms during this period, see Gertrude E. Schroeder, "Post-Soviet Economic Reforms in Perspective," in this volume.

<sup>7</sup> Because the new leadership did not take charge until the spring of 1985, the results in 1985 are attributed to the previous regime in the periodization employed in Table 1. The GNP estimates reported in the table are based on values of Soviet GNP in 1982 prices at factor cost (see footnote 2 above).

<sup>8</sup> CIA, *Handbook of Economic Statistics, 1991*, p. 67.

	Average Annual Percent Change			
	1961-70	1971-80	1981-85	1986-88
Labor .....	3.1	2.6	1.3	3.4
Capital .....	-2.9	-3.0	-3.5	-0.5
Labor and capital combined .....	-0.3	-0.6	-1.4	1.3

TABLE 1. U.S.S.R.: Growth of GNP, by Sector of Origin, 1981-91.

GNP Component	Average Annual Percent Change			Annual Percent Change					
	1981-83	1984-85	1986-90	1986	1987	1988	1989	1990 *	1991 *
Total GNP .....	2.2	1.1	1.3	4.1	1.3	2.1	1.5	-2.4	-8.5
Industry .....	1.6	2.3	0.9	2.4	3.0	2.7	-0.6	-2.8	-10.5
Construction .....	0.4	2.2	0.0	3.7	2.4	3.1	-0.5	-8.0	-15.0
Agriculture .....	4.0	-3.0	1.8	11.2	-3.8	-0.4	6.1	-3.6	-8.5
Transportation .....	2.5	1.7	0.7	3.0	1.2	2.6	-0.3	-2.9	-7.5
Communications .....	3.3	4.6	5.1	5.6	6.9	5.0	5.3	3.0	1.0
Domestic trade .....	1.7	1.6	1.5	-0.2	1.6	3.3	2.3	0.4	-10.5
Services .....	2.1	2.4	2.3	2.3	3.2	2.9	2.2	1.0	-4.0

Source: CIA estimates, based on value added at 1982 factor cost, as reported in *Handbook of Economic Statistics, 1991*, p. 62.

\* Because of greater uncertainty than in past years, estimated change in total GNP in 1990 ranges from -2.4 to -5 percent. Estimate of 2.4 percent decline in total GNP and all estimates for individual components are based on routine application of standard CIA methods. Estimate of 5 percent decline in total GNP reflects corrections (described in *ibid.*) for measurement problems that worsened in 1990.

\* Authors' rough estimates, made using same basic methods as CIA estimates for earlier years but much more tentative data on changes in output; estimates pertain to Commonwealth of Independent States area only (former U.S.S.R. excluding Estonia, Latvia, Lithuania, and Georgia).

In 1989, performance slipped abruptly in every branch of industry, and the deterioration continued in the following two years. To some extent the developments were the intended consequences of the central government's policy. When economic priorities were revised in 1989 in favor of consumption, the cutbacks in state-funded investment reduced demand for ferrous metals and construction materials. Similarly, the decision to scale back spending on military procurement so as to free up defense industry capacity for production of civilian goods curtailed output in the machinery sector. As the government soon discovered, defense conversion was not easy or quick. The abrupt shift in priorities also depended on the assumption—or hope—that the continuing rise in investment could be curbed without affecting energy production.<sup>9</sup> This assumption proved to be mistaken; production of fuels and power could not be maintained at planned or even existing levels without ever-increasing injections of investment. The problems in the fuel sector soon surfaced in slower growth of chemical feedstocks and a decline in output of chemicals.

The year 1989 also marked the extension of Gorbachev's 1987 reforms to all sectors of the economy and the intensification of ethnic strife. Under the reforms industrial enterprises were increasingly responsible for planning and marketing their own production and

<sup>9</sup> Investment in energy (fuels and electric power) increased by 7.3 percent per year in 1976-88, compared with an average annual increase of 4.2 percent in total investment. Energy's share of total investment rose from 10 percent in 1970 to 16 percent in 1988.



TABLE 2. U.S.S.R.: Industrial Growth, by Branch, 1981-91.

Industry Component	Average Annual Percent Change			Annual Percent Change					
	1981-83	1984-85	1986-90	1986	1987	1988	1989	1990	1991*
Total industry.....	1.6	2.3	0.9	2.4	3.0	2.7	-0.6	-2.8	-10.5
Ferrous metals.....	1.8	1.8	0.1	3.6	0.8	1.5	-2.0	-3.4	-14.0
Nonferrous metals.....	1.4	3.0	1.2	3.0	2.3	3.2	0.8	-3.0	-11.0
Fuel.....	1.3	0.1	0.1	3.3	1.9	1.4	-1.6	-4.0	-8.5
Electric power.....	2.6	3.8	2.3	3.5	4.1	2.4	1.0	0.3	-2.0
Machinery.....	1.1	2.7	0.7	2.4	3.7	2.7	-1.4	-3.5	-13.5
Chemicals.....	3.9	3.7	0.2	4.7	2.7	2.2	-2.9	-5.3	-9.5
Wood, pulp, and paper.....	1.6	2.5	1.4	4.5	2.2	3.2	-0.5	-2.2	-10.5
Construction materials.....	1.7	1.9	1.6	4.0	3.7	4.2	0.6	-3.9	-7.0
Light industry.....	0.8	2.6	1.4	1.4	1.7	2.4	1.5	0.0	-8.5
Food industry.....	2.9	0.2	1.0	-4.7	3.6	4.1	3.1	-0.8	-12.0

Source: CIA estimates, based on value added at 1982 factor cost, as reported in *Handbook of Economic Statistics, 1991*, p. 68.

\* Authors' rough estimates, made using same basic methods as CIA estimates for earlier years but much more tentative data on changes in output; estimates pertain to Commonwealth of Independent States area only (former U.S.S.R. excluding Estonia, Latvia, Lithuania, and Georgia).

financing their own investment. The changeover was more difficult than anticipated. Products which were unprofitable to manufacture at existing prices soon were hard to find, and the lack of a functioning wholesale trade sector to supplant the state supply system meant that interruptions in supplies interfered increasingly with production schedules. Ethnic unrest and associated transportation blockades also brought some production to a halt. In 1990 and especially in 1991, the clash of nationalities and the desire to protect republic and local interests assumed a much larger role in blocking interregional deliveries of industrial supplies and finished products.

The transition to enterprise independence and wholesale trade would have proceeded much more smoothly, however, if the rubles in enterprise bank accounts had real purchasing power. As inflationary pressures mounted, enterprises found that these "noncash" rubles, if not backed by government orders, could not buy goods in short supply, and barter became an increasingly important mode of exchange. On the one hand, barter helped to sustain trade in industrial supplies and products as the scope and authority of state planning diminished. On the other hand, it was a cumbersome process that imposed its own penalty on the level of industrial activity.

### Agriculture

Food shortages in state stores became increasingly prevalent during Gorbachev's administration, but the average production of most key farm products was substantially higher than in the two preceding five-year periods (Table 3).<sup>10</sup> Agriculture's principal contribution to Soviet economic decline was not a diminution in the supply of farm products. Rather, it was the huge and increasing investments poured into the sector and the growing budget subsidies

<sup>10</sup> The year-to-year changes in net farm output shown in Table 3 are not as variable as the changes in agriculture's contribution to GNP, or value added, shown in Table 1. Variations in net farm output are accentuated by the deduction of purchases from other sectors in order to calculate value added in agriculture.

required to finance the difference between prices paid to farms and the lower, fixed prices of food in state retail stores.<sup>11</sup>

TABLE 3. U.S.S.R.: Agricultural Output, by Agricultural Component, 1981-91.

Agricultural Component	Average Annual Metric Tons (Millions)		Annual Metric Tons (Millions)					
	1981- 85	1986- 90	1986	1987	1988	1989	1990	1991 <sup>a</sup>
	Net output (value in billions of rubles) <sup>b</sup> .....	123.1	135.4	136.7	133.8	133.6	138.9	134.5
<b>Crops</b>								
Grain.....	168.7	196.6	194.0	193.8	180.2	196.7	218.0	161.2
Potatoes.....	78.4	72.3	87.2	75.9	62.7	72.2	63.6	67.0
Vegetables.....	29.2	28.7	29.7	29.2	29.3	28.7	26.6	26.2
Sunflower seed.....	5.0	6.2	5.3	6.1	5.2	7.1	6.6	6.3
Sugar beets.....	76.4	87.3	79.3	90.7	88.0	97.4	81.7	66.5
Cotton.....	8.3	8.4	8.2	8.1	8.7	8.6	8.3	7.8
<b>Livestock</b>								
Meat.....	16.2	19.3	18.0	18.9	19.7	20.1	20.0	18.6
Milk.....	94.6	105.9	102.2	103.8	106.8	108.5	108.4	101.5
Eggs <sup>c</sup> .....	74.4	83.0	80.7	82.7	85.2	84.9	81.7	78.7
Wool.....	0.46	0.47	0.47	0.46	0.48	0.48	0.47	0.47

Source: Soviet official statistics, except as noted: 1981-90 from *Narodnoye khozyaystvo SSSR v 1990 g.* (Moscow: Finansy i statistika, 1991), pp. 460, 462; 1991 from reports published by statistical agencies of Commonwealth of Independent States and individual countries. Hereafter referred to as *Narkhoz*.

<sup>a</sup> Preliminary.

<sup>b</sup> CIA estimates valued in 1982 established prices; net of feed, seed, and an allowance for waste in harvesting.

<sup>c</sup> Billions of eggs.

### Construction and Transportation

The fortunes of two other sectors of origin—construction and transportation—reflected the policy shifts and regional struggles that crippled parts of industry in the late 1980s. After an early spurt in 1986-88, construction became constrained first by shortages of materials and machinery to service a construction front that had expanded too rapidly. Then, the sharp reductions in state funding for investment, connected with a shift in priorities from modernization to consumption, forced a reduction in construction activity. Transportation barely kept up with overall economic growth in 1986-88 and then tailed off as the demand for its services declined, its physical plant deteriorated for lack of sufficient investment, and civil unrest and local autarky severed transportation links.

### GNP BY END USE

The failures of perestroika in the economy led to some sharp discontinuities in the allocation of Soviet GNP by end use. When economic growth was not rapid enough to revive the stagnant consumer sector, the leadership's priorities changed in favor of consumption. But what were intended to be shifts at the margin turned out to be major cutbacks in investment and defense as the

<sup>11</sup> The agricultural subsidy bill climbed from 25 billion rubles in 1980 to 105 billion rubles in 1990, the result of a tripling of prices paid by the state for grain and other crops and a doubling of prices paid for most livestock products during a period when retail prices of the main foods were virtually unchanged.

government tried to decentralize investment decisions as part of the economic reform and correct the growing disequilibrium in the economy resulting from steeply rising budget deficits.

### Consumption

Under Gorbachev, consumption grew at about the same rate as in the early 1980s (Table 4). The trouble was that its record in 1981-85, and especially in 1981-83, was so lackluster (less than 1 percent per year in per capita terms) that it elicited considerable consumer discontent and was a factor in convincing a group of senior Politburo members that a new approach to economic policy was necessary. Under the new leadership, the old problem of stagnation in real consumption levels was compounded by the loss of control over the population's incomes that was the consequence of partial economic reforms and the inflationary pressure created by huge budget deficits.

TABLE 4. U.S.S.R.: Growth of GNP, by End Use, 1981-90.

End Use Component	Average Annual Percent Change			Annual Percent Change				
	1981-83	1984-85	1986-90	1986	1987	1988	1989	1990 <sup>a</sup>
Total GNP.....	2.2	1.1	1.3	4.1	1.3	2.1	1.5	-2.4
Consumption.....	1.6	2.3	2.2	1.5	2.2	3.5	2.3	1.5
Food.....	0.8	1.4	1.4	-0.1	1.5	3.4	1.6	0.5
Soft goods.....	1.0	3.6	3.1	3.0	2.0	3.5	4.3	2.4
Durables.....	3.8	3.9	3.2	4.0	1.3	3.9	1.9	5.1
Household services.....	2.9	3.1	2.9	3.1	3.8	3.7	2.3	1.4
Communal services.....	1.7	1.9	2.3	1.1	2.7	3.1	2.8	2.0
Investment.....	3.0	2.1	1.1	5.3	1.7	4.5	0.6	-6.0
New fixed investment.....	3.3	2.1	1.1	6.5	0.6	4.9	0.8	-6.8
Capital repair.....	1.9	2.1	1.1	0.7	5.7	2.7	0.0	-3.2
Government administration.....	1.7	1.2	-1.6	1.5	1.7	-2.5	-3.6	-4.8
Exports <sup>b</sup> .....	3.3	-0.8	1.4	9.3	2.1	2.5	8.0	-13.2
Imports <sup>c</sup> .....	6.6	4.5	-0.3	-5.0	1.0	2.8	1.2	-1.1

Source: CIA estimates, except as noted: based on values at 1982 factor cost, as reported in *Handbook of Economic Statistics, 1991*, p. 64.

<sup>a</sup> Because of greater uncertainty than in past years, estimated change in total GNP in 1990 ranges from -2.4 to -5 percent. The estimate of 2.4 percent decline in total GNP and all estimates for individual components are based on routine application of standard CIA methods. The estimate of 5 percent decline in total GNP reflects corrections (described in *ibid.*) for measurement problems that worsened in 1990.

<sup>b</sup> Soviet official statistics, from *Vneshniye ekonomicheskiye svyazi, 1990* (Moscow, 1991), pp. 6, 17.

Shortages of food increased in severity as the gap widened between the population's disposable income and the volume of goods and services available for purchase.<sup>12</sup> The statistics indicate a somewhat more favorable situation in the supply of soft goods and durables. Here too, however, the population's demand outstripped availability. As a result, an increasing share of consumer goods were driven out of state retail trade and sold legally or illegally at higher prices in parallel markets.<sup>13</sup>

<sup>12</sup> Emigré surveys conducted by Radio Free Europe/Radio Liberty suggest that the availability of food products in state stores increased in 1983-84, declined slightly in 1985, worsened steadily in 1986-88, and then dropped sharply in 1989. In 1989, little more than one-quarter of respondents reported regular availability of 22 food groups in state stores compared with 53 percent in 1984. (James Noren, *op. cit.*, pp. 17-20.)

<sup>13</sup> Uncertainty about the share of goods sold in these markets is a major source of disagreement about the degree of open inflation in the U.S.S.R. in 1986-91. Despite the initial sporadic

Continued

The government responded by jettisoning its initial investment-oriented strategy. In particular, it charged the defense industry with taking over machine building for the food and light industry and greatly increasing its production of consumer durables. By the time Gorbachev's period of effective rule ended (in early 1991), the greater investment in the food and light industry had not yet paid off, but production of consumer electronics and household durables such as refrigerators, washing machines, and vacuum cleaners had improved. In any event, the consumer-oriented programs foundered in the confusion accompanying the economic reform and the governmental paralysis brought on by the conflict between the center and the republics and between the old-line communists and the reformers in the republics. With its hard currency resources shrinking, the Soviet government also was forced in 1990 to curtail the imports of food and consumer goods that had augmented domestic supplies. As a consequence, consumption tailed off in 1990 and declined sharply in 1991.

### *Investment*

Plans to modernize the economy on the basis of a surge in investment and a focus on investment in machinery and equipment rather than construction-installation work did not pan out as perestroika proceeded. After an initial acceleration, the growth of new fixed investment faltered in 1987, recovered briefly, and then fell back again in 1989 when Soviet policymakers decided to rein in state investment in an attempt to cool down an overheated economy. By 1990 the level of capital investment was falling precipitously. Over the whole 1986-90 period, the growth of capital investment was much slower than in 1981-85. The goal of "improving" the structure of capital investment by raising the share accounted for by machinery and equipment was also frustrated. The ratio of construction-installation work to machinery and equipment, according to official statistics, increased through 1988 before falling to its 1985 level in 1989. In 1990 and 1991 the sharp fall in new project starts finally brought about an increase in the machinery share.

The modernization program was jettisoned fundamentally because it did not generate the productivity gains necessary to sustain rising standards of living and prevent macroeconomic disequilibrium. The reasons for the low productivity of investment during the Gorbachev era are as various as the factors that disrupted the economy during the period. But the investment program failed also because of constraints that appeared within the investment sector. First of all, the machine building sector was not prepared to handle the increased production of producer durables implicit in higher rates of growth of investment and a larger share for machinery in total investment. The strain on machine building was particularly severe because it was at the same time being asked to improve the quality of its products, shift its output mix toward the

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and then more general unavailability of food in state stores, however, the increased inflationary pressure did not show up until 1990 in collective farm markets, where prices could rise or fall according to supply and demand. Soviet official statistics indicate that the ratio of prices of food in those markets to prices in state retail stores increased slowly from 2.63 in 1985 to 2.94 in 1989, a rise of 12 percent. In 1990, the ratio jumped to 3.51, or by 19 percent (*Narodnoye khozyaystvo SSSR v 1989 g.*, Moscow: Finansy i statistika, p. 138).

higher technology end of the spectrum, accelerate the production of consumer durables, and continue to produce large quantities of military hardware. As Gorbachev and other leaders repeatedly complained, machine building enterprises did not achieve the technological improvements necessary for the investment program to make a real difference.

Moreover, economic reform and shortcomings in construction delayed the completion of investment projects and thereby diminished the effectiveness of new investment. For a time (1986-87), the ratio of the annual value of completed construction projects to total new fixed investment held at roughly the 1985 level (about 96 percent). The ratio then dropped to 88 percent in 1988 and 84 percent in 1990. Meanwhile, the volume of unfinished construction in industry (the focus of the modernization campaign) climbed from 94 percent of annual new fixed investment in 1985 to 130 percent in 1990.<sup>14</sup>

In part the difficulties in completing projects resulted from mistakes in the 1986-90 plan—an inconsistency between planned production of construction materials and the investment goals. When the partial reforms in Gorbachev's 1987 package brought a reduction in centralized control over investment, enterprises responded by initiating a large number of new projects having no assured backing in terms of construction resources. The dispersal of too few resources among too many projects dragged out construction time substantially. Hoping to restore order in construction and reduce the state budget deficit, the union government slashed budget-financed investment further in 1990 and 1991. By then enterprises were largely on their own in financing investment and reluctant to continue investing at the levels they had earlier.

#### *Defense and Civil Research and Development*

The unraveling of *perestroika* dislodged defense from its leading position in Soviet resource allocation. Outlays on defense programs and civil research and development increased rapidly in the early years, but then the leadership decided to turn to the defense sector to rescue a flagging economy. By 1991, real spending on defense had fallen to the lowest level since the early 1970s.<sup>15</sup>

Initially, the government apparently planned to increase outlays on defense at a rate not attained since the early 1970s.<sup>16</sup> By the early 1980s, military criticism of Brezhnev's defense policies had surfaced. Some defense leaders probably believed that the Soviet Union was not doing enough to counter the U.S. defense buildup under way since the last years of the Carter administration.<sup>17</sup>

<sup>14</sup> The ratios reflect unfinished construction at the end of a given year relative to new fixed investment that year. Campaigns to reduce unfinished construction were common in the 1960s and 1970s. In 1981-85, the authorities had some success on this front, reducing the ratio in the economy as a whole from 87 percent in 1980 to 79 percent in 1985.

<sup>15</sup> The estimates of spending on defense in 1982 rubles have been taken from the papers submitted by CIA and DIA to the Joint Economic Committee in connection with their annual joint testimony on developments in the Soviet Union.

<sup>16</sup> In June 1989 Premier Nikolay Ryzhkov revealed that in the formulation of the 1986-90 plan it was decided to maintain the growth of defense spending at a rate higher than that of national income (planned at an average of 4.5 percent per year). He explained that the "international situation prevailing and our military doctrine" required this course (*Izvestiya*, 8 June 1990).

<sup>17</sup> In 1979-84, U.S. defense spending increased by 36 percent in real terms; CIA estimates put the real growth of Soviet defense spending during this period at 11 percent.

With the benefit of hindsight, Gorbachev's decision to accelerate the growth of defense spending at a time when the U.S.S.R. was beginning a massive restructuring and renovation of its economy seems inexplicable. But Gorbachev believed that a restoration of past rates of economic growth would permit all of his programs to go forward.

When consumer discontent over living standards became increasingly evident and industrial modernization ran into trouble as an overtaxed machine building sector struggled to cope with all its various assignments, the regime first responded by giving the defense industry additional tasks in support of modernization and the consumer.<sup>18</sup> This could not work, however, because the entire machine building sector was trying to do too much. During 1988, the Soviet leadership realized that priorities would have to be changed if *perestroyka* was to be rescued.<sup>19</sup> Its decisions, announced by Gorbachev at the United Nations in December 1988 and a meeting with the Trilateral Commission in January 1989, encompassed a 500,000-man cut in force levels, partial withdrawal of forces from Eastern Europe and Mongolia, and reductions in military spending and military production of 14.2 and 19.5 percent over a period of two years. Before long the deteriorating economic situation pushed the Gorbachev team to cut defense further. The announced defense budgets for 1990 and 1991 specified declines in defense spending of 8.3 and 8.5 percent, respectively, with the largest cuts programmed for procurement of weapons.

The defense industry's tepid response to calls for greater support for civil programs during 1986-88 may have convinced Gorbachev that it would not or could not contribute in a major way to *perestroyka* until part of its assured market for military hardware had been removed. In the last three years of Gorbachev's rule, however, hopes faded that defense conversion might give an impetus to the production of investment goods and consumer durables. Conversion plans imposed from the top down did not work, and defense industrialists found it at least as hard to operate in an increasingly unplanned economy as did their civilian counterparts.<sup>20</sup> Much of existing capacity could not be adapted to civil production quickly or easily, and the decline in production of military equipment in 1989-91 was far from offset by an increase in the output of civil machinery in defense industry.

### *Administration and Other Government Services*

Under *perestroyka* real outlays on administration and government services declined—by an average of 1.6 percent per year in

<sup>18</sup> In October 1987 Ryzhkov gave the defense industrial ministries specific targets for deliveries to the food processing branch of industry, and in February 1988 it was decided that the civilian ministry producing equipment for the food and light industries would be abolished and its resources and responsibilities transferred to several defense-related ministries.

<sup>19</sup> In a trip to Krasnoyarsk in September 1988 Gorbachev encountered the sullen mood of the populace in its full force. The crowds complained bitterly about the lack of food, housing, schools, and health care.

<sup>20</sup> Arguably, defense industry managers were even more at sea than the directors of civil industry. The defense industry was accustomed to preferential treatment in terms of supplies and labor, and—as the complaints of military leaders now indicate—largely had their own way in deciding what to produce and what prices to charge.

1986-90 (Table 4).<sup>21</sup> In the first two years of the period these expenditures actually increased more rapidly than they had in 1984-85. After 1987, Gorbachev's drive to trim the ministerial bureaucracy coupled, with economic reform's erosion of central planning and administration, led to successively larger absolute reductions in the end-use category. Within the category, however, activities related to culture enjoyed growing support.

### *Net Exports*

In the early 1980s the Soviet consumer and the economy generally were helped by an improvement in the U.S.S.R.'s terms of trade that permitted real imports to rise substantially more than exports (Table 4).<sup>22</sup> This advantage disappeared in the Gorbachev years. The U.S.S.R. encountered some bad luck early in the Gorbachev period when prices for its principal export products—oil and gas—fell sharply in 1986.<sup>23</sup> Later, slumping domestic production forced a reduction in the volume of exports of crude oil and petroleum products. As a consequence, the value of Soviet exports declined by 6 percent in 1986, leveled off through 1989, and then fell by 12 percent in 1990.

When perestroika was under pressure in 1988-89, the government sought relief from shortages by increasing spending on imports, a policy that could not be continued as export earnings tailed off, foreign exchange reserves dwindled, and private lenders to the U.S.S.R. sought to reduce their exposure in a country that was tardy in its debt service and whose political future was uncertain.

In 1991, the U.S.S.R.'s foreign trade collapsed. The value of exports and imports in the Commonwealth of Independent States (the U.S.S.R. less the Baltics and Georgia) plunged by 33 percent and 44 percent, respectively. Trade with Eastern Europe was crippled by the Soviet attempt to convert it to world prices, while lack of hard currency required a sharp cutback in purchases from capitalist countries. The sudden breakdown in established trading relationships was a major factor in pushing the Soviet economy from slow decline into a major depression.

## DEVELOPMENTS IN THE REPUBLICS

The Soviet economic system—like the political system—was highly centralized when Gorbachev came to power in 1985. For a short period in the late 1950s and early 1960s, Khrushchev had organized economic administration on a regional basis, with enterprises supervised by regional economic councils appointed by republic councils of ministers. The Brezhnev regime returned eco-

<sup>21</sup> In the CIA end-use accounts this category encompasses administration of state and social organizations, general agricultural programs, support of the forest economy, outlays on cultural activities, provision of municipal services, and the financing of civil police.

<sup>22</sup> Estimates of the net exports component of real GNP for the Soviet Union cannot be made with precision for two reasons. First, data on trade in services have not been published, and second, the values for trade with capitalist and socialist countries are not comparable because the prices at which they are stated are often quite different for identical products. The statistics shown in Table 4, taken from official Soviet yearbooks, are probably adequate, however, to indicate trends in the contribution of foreign trade to Soviet GNP even though they cannot support an estimate of net exports of goods and services in constant prices.

<sup>23</sup> According to Soviet statistics, prices for Soviet crude oil and natural gas in all foreign markets in 1990 were, respectively, 63 percent and 58 percent of the 1985 level (*Narkhoz 1990*, pp. 648-649).

conomic administration to its traditional industrial basis—with enterprises throughout the U.S.S.R. subordinate to Moscow-based ministries—and the scope of central authority gradually increased. For example, the share of industrial output produced under the supervision of all-union ministries rose from 50 percent in 1970 to 58 percent in 1985, and the union's share of state budget expenditures went from 51 to 53 percent in 1970–79 to 52 to 54 percent in 1980–85.

Despite this centralization of authority, economic conditions varied greatly across the U.S.S.R. From the 1930s through the 1950s, Soviet economic development policies almost certainly reduced the extent of economic inequality among regions. The less developed republics were industrialized, and basic levels of education and health care were established throughout the country. Nevertheless, substantial inequalities persisted when Brezhnev declared in 1972 that the major economic disparities among national groups had been resolved, and Soviet efforts to reduce these inequalities slackened in the 1970s and 1980s.<sup>24</sup>

Recently published Soviet statistics on republic levels of GNP and consumption per capita in 1989 indicate wide variations in levels of economic development. Variations in GNP are somewhat greater than variations in consumption, but both measures suggest the same division of republics into three broad groups. Russia, Belarus, and the three Baltic republics—Estonia, Latvia, and Lithuania—had the highest levels of GNP and consumption per capita, while Azerbaijan and the four Central Asian republics—Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan—clearly ranked lowest. The middle group of republics consisted of Ukraine, Moldova, Kazakhstan, Armenia, and Georgia.

Before we discuss the record of economic performance by republic during the Gorbachev years, a few words about questions of measurement are needed. In the rest of this paper we rely on Western estimates of economic growth for the U.S.S.R. as a whole. Western estimates for individual republics are scarce, however, and, even when available, generally are more tentative than corresponding estimates for the Soviet Union.<sup>25</sup> In this section we use Soviet official statistics to compare *relative* rates of economic growth across republics—a purpose for which Western scholars have found these statistics to be adequate. Like official macroeconomic indicators for the U.S.S.R. as a whole, however, these summary statistics for the republics overstate actual rates of real growth.

Almost all of the Soviet republics experienced slower rates of growth of real output in 1986–89 than in 1981–85 and declining levels of output in 1990 and 1991. These trends are reflected in statistics on “national income produced,” a Soviet official measure that is similar to GNP in coverage, except that national income ex-

<sup>24</sup> For a more thorough discussion of Soviet regional economic policies and their consequences, see Gertrude E. Schroeder, “Regional Economic Disparities, Gorbachev's Policies, and the Disintegration of the Soviet Union,” in this volume.

<sup>25</sup> For some of the few Western estimates available, see *ibid.*; Douglas Diamond and Gregory Kisunko, “Industrial Growth by Republic in the Former USSR, 1981–90,” in this volume; and Gertrude E. Schroeder, “Regional Living Standards,” in *Economics of Soviet Regions*, I.S. Korpeckyj and Gertrude E. Schroeder (eds.) (New York: Praeger, 1981).



cludes depreciation and services that do not contribute directly to material output (see Tables 5 and 6). Official statistics on the output of industry and agriculture generally show trends consistent with those in national income, and so do statistics on consumption (Tables 7-9).

For the most part, republics with relatively high per capita levels of national income and consumption increased their lead over lower-income republics during the 1986-90 period. Russia, by virtue of its size, grew at rates close to the U.S.S.R. average. Outside Russia, rates of growth of national income—both total and per capita—were generally average or better in the Western and Baltic republics. In contrast, national income per capita declined in Kazakhstan, Tajikistan, and Turkmenistan and barely rose in Uzbekistan. The Caucasian republics went from above average growth in 1981-85 to negative growth in 1986-90, largely reflecting the effects of the ethnic clashes that began to flare in 1989.

National income for the U.S.S.R. as a whole increased through 1989 (as GNP did), but in that year five republics experienced declines—probably reflecting a combination of ethnic violence and regional difficulties in agriculture. The downturn deepened in 1990 and again in 1991, when it expanded to include the republics. In general, the fall in output was greatest where ethnic and political clashes were fiercest, but the destruction of the old economic system brought problems everywhere.

Investment allocations contributed to some of the differences in output growth among republics (Tables 10-11). Belarus and Lithuania benefited from above average rates of increase in investment throughout the 1980s. Azerbaijan and Georgia went from above average investment growth in 1981-85 to below average growth in 1986-90. It appears that a sharp increase in investment in Armenia following the 1988 earthquake came at the expense of investment cuts in the neighboring republics.

Moreover, Gorbachev's economic reforms most likely played a role in the relatively better economic performance of the higher income republics. As noted above, these reforms called for republic and local governments to cover more of their budget expenditures out of revenues collected on their territory. This exacerbated the disadvantages faced by lower income regions, despite the transfer of revenues to them from the union budget.

#### REFLECTIONS ON THE GORBACHEV ECONOMIC RECORD

The economic history of the U.S.S.R. in its last decade is likely to be discussed and debated for many years to come. Some have argued that the Soviet economy already was in decline as it entered the 1980s. Judged by its ability to produce goods and services, this was not the case. It was, however, a failing economy in the sense that it had increasing difficulty in producing the assortment of goods and services desired by the population and that a rising proportion of increments to total production were accounted for by additions to the labor force and the capital stock rather than by gains in the productivity of labor and capital. Nonetheless, the popular description of the economy as in a state of collapse cannot be supported from the statistics on production.

TABLE 5. U.S.S.R.: Growth of National Income Produced,  
by Republic, 1981-91.

Republic	Average Annual Percent Change		Annual Percent Change					
	1981- 85	1986- 90	1986	1987	1988	1989	1990	1991 <sup>a</sup>
Russia.....	3.0	0.9	2.4	0.7	4.5	1.9	-5.0	-11
Ukraine.....	3.4	2.4	1.6	5.3	2.5	4.1	-1.5	-11
Belarus.....	5.3	3.3	4.3	3.5	2.4	7.9	-1.4	-3
Moldova.....	2.8	2.5	7.2	1.8	2.0	8.6	-6.6	-12
Kazakhstan.....	0.9	1.0	1.4	0.1	5.8	-0.4	-1.7	-10
Kyrgyzstan.....	3.7	3.8	0.9	2.7	12.7	4.3	-0.9	-5
Tajikistan.....	2.6	-0.8	3.5	-1.4	12.2	-7.8	-8.9	-9
Turkmenistan.....	2.2	2.3	4.3	3.8	10.2	-6.8	0.5	-0.6
Uzbekistan.....	3.0	2.7	-0.2	0.2	9.5	2.7	1.4	-0.9
Armenia.....	5.5	-0.9	1.7	-0.6	-2.3	7.5	-9.8	-11
Azerbaijan.....	4.4	-1.7	1.6	4.0	0.6	-6.0	-8.0	-0.4
Georgia.....	4.8	-0.8	-1.1	-1.9	6.9	-3.4	-4.3	-23
Estonia.....	2.8	3.4	2.9	1.2	5.2	6.6	1.1	-11
Latvia.....	3.3	3.2	4.6	1.5	6.2	7.4	-3.2	-8
Lithuania.....	4.3	1.7	6.3	4.8	10.7	1.6	-13.0	-10
U.S.S.R.....	3.2	1.3	2.3	1.6	4.4	2.5	-4.0	-15 <sup>b</sup>

Source: Soviet official statistics—1981-90 from *Soyuznyye respubliki: osnovnyye ekonomicheskiye i sotsialnyye pokazateli* (Moscow: Goskomstat Information-Publishing Center, 1991), p. 8; 1991 from reports published by statistical agencies of Commonwealth of Independent States (CIS) and individual countries.

<sup>a</sup> Preliminary.

<sup>b</sup> Reported decline for the U.S.S.R. reflects the CIS only and is steeper than the weighted average of declines reported for individual countries. Part of this discrepancy probably results from use of inadequate deflators for at least some countries.

TABLE 6. U.S.S.R.: Growth of per Capita National Income Produced,  
by Republic, 1981-91.

Republic	Average Annual Percent Change		Annual Percent Change					
	1981- 85	1986- 90	1986	1987	1988	1989	1990	1991 <sup>a</sup>
Russia.....	2.4	0.2	1.6	-0.1	3.7	1.4	-5.4	-11
Ukraine.....	3.0	2.0	1.2	4.9	2.1	3.7	-1.7	-11
Belarus.....	4.6	2.7	3.7	2.9	1.8	7.3	-1.9	-3
Moldova.....	1.7	1.7	6.2	1.0	1.3	7.9	-7.0	-12
Kazakhstan.....	-0.3	-0.1	0.2	-1.2	4.5	-1.5	-2.5	-11
Kyrgyzstan.....	1.6	2.0	-1.1	0.7	10.6	2.5	-2.4	-6
Tajikistan.....	-0.3	-3.7	0.1	-4.5	8.8	-10.5	-11.1	-11
Turkmenistan.....	-0.3	-0.3	1.6	1.1	7.5	-9.1	-2.1	-3
Uzbekistan.....	0.3	0.2	-2.9	-2.5	6.9	0.4	-0.7	-3
Armenia.....	4.4	-1.5	0.6	-1.6	-2.5	7.7	-10.7	-13
Azerbaijan.....	2.8	-3.0	0.1	2.4	-0.9	-7.4	-8.9	-0.5
Georgia.....	3.9	-1.5	-2.0	-2.7	6.1	-4.0	-4.6	-23
Estonia.....	2.2	2.6	2.0	0.2	4.3	5.8	0.8	-11
Latvia.....	2.8	2.5	3.8	0.5	5.1	6.8	-3.3	-8
Lithuania.....	3.5	0.8	5.3	3.7	9.5	0.6	-13.6	-10
U.S.S.R.....	2.3	0.5	1.3	0.6	3.5	1.7	-4.4	-15 <sup>b</sup>

Sources: Soviet official statistics—1981-90 from *Soyuznyye respubliki: osnovnyye ekonomicheskiye i sotsialnyye pokazateli* (Moscow: Goskomstat Information-Publishing Center, 1991), p. 9; 1991 from reports published by statistical agencies of Commonwealth of Independent States (CIS) and individual countries.

<sup>a</sup> Preliminary.

<sup>b</sup> The reported decline for U.S.S.R. reflects CIS only and is steeper than the weighted average of declines reported for individual countries. Part of this discrepancy probably results from use of inadequate deflators for at least some countries.

TABLE 7. U.S.S.R.: Growth of Industrial Output, by Republic, 1981-91.

Republic	Average Annual Percent Change		Annual Percent Change					
	1981-85	1986-90	1986	1987	1988	1989	1990	1991 <sup>a</sup>
Russia.....	3.3	2.6	4.5	3.5	3.8	1.4	-0.1	-2.2
Ukraine.....	3.4	3.0	4.2	3.9	4.1	2.8	-0.1	-4.5
Belarus.....	5.3	5.3	6.7	6.7	6.3	4.6	2.1	-1.5
Moldova.....	4.4	4.0	2.6	5.0	3.3	5.7	3.2	-7.0
Kazakhstan.....	3.4	2.9	5.1	4.3	3.7	2.5	-0.8	0.7
Kyrgyzstan.....	4.6	3.4	4.3	1.4	5.8	5.2	-0.6	0.1
Tajikistan.....	3.7	3.0	1.7	5.0	5.5	1.8	1.2	-2.0
Turkmenistan.....	2.6	3.7	4.8	3.1	4.3	3.3	3.2	4.1
Uzbekistan.....	4.5	3.3	5.5	2.5	3.3	3.6	1.8	1.8
Armenia.....	5.7	-1.7	4.5	4.7	-1.1	-8.3	-7.5	-9.6
Azerbaijan.....	4.4	-0.2	-2.0	3.7	3.4	0.7	-6.3	3.8
Georgia.....	4.0	0.6	2.3	2.5	3.2	0.7	-5.7	-1.9
Estonia.....	2.8	2.1	3.8	3.0	3.1	0.7	0.1	-9.0
Latvia.....	3.3	2.9	3.7	4.2	3.5	3.1	-0.2	0.0
Lithuania.....	4.5	3.2	4.8	4.6	5.7	4.2	-2.8	-1.3
U.S.S.R.....	3.6	2.5	4.4	3.8	3.9	1.7	-1.2	-7.8 <sup>b</sup>

Sources: Soviet official statistics—1981-90 from *Soyuznyye respubliki: osnovnyye ekonomicheskiye i sotsialnyye pokazateli* (Moscow: Goskomstat Information-Publishing Center, 1991), pp. 137-139; 1991 from reports published by statistical agencies of Commonwealth of Independent States (CIS) and individual countries.

<sup>a</sup> Preliminary.

<sup>b</sup> The reported decline for U.S.S.R. reflects CIS only and is steeper than the weighted average of declines reported for individual countries. Part of this discrepancy probably results from use of inadequate deflators for at least some countries.

TABLE 8. U.S.S.R.: Growth of Agricultural Output, by Republic, 1981-91.

Republic	Average Annual Percent Change <sup>a</sup>		Annual Percent Change					
	1981-85	1986-90	1986	1987	1988	1989	1990	1991 <sup>b</sup>
Russia.....	1.0	2.2	6.7	-1.2	3.2	1.7	-3.6	-5
Ukraine.....	0.5	1.6	2.2	2.2	-1.6	5.1	-3.7	-12
Belarus.....	1.6	2.0	6.9	0.1	-7.3	8.9	-8.7	-3
Moldova.....	1.3	0.9	10.1	-4.3	0.6	5.2	-12.8	-11
Kazakhstan.....	0.1	3.0	12.6	-2.6	4.4	-7.3	6.8	-8
Kyrgyzstan.....	1.7	3.0	7.9	1.5	4.1	2.5	1.3	-8
Tajikistan.....	1.7	0.7	3.7	-7.0	9.4	-10.8	2.8	-10
Turkmenistan.....	2.2	3.7	-1.8	5.0	8.6	0.3	7.0	-2
Uzbekistan.....	2.0	0.7	-2.0	0.3	8.8	-4.3	6.3	-5
Armenia.....	2.6	-1.7	3.3	-6.9	1.4	-18.7	-11.4	11
Azerbaijan.....	5.2	-0.7	-2.0	-1.0	-3.2	-8.9	-0.1	0
Georgia.....	2.5	-0.4	4.5	-6.8	3.5	-15.5	6.9	NA
Estonia.....	0.8	0.9	7.1	-2.6	-3.7	7.6	-13.1	-16
Latvia.....	2.3	1.5	5.5	-1.7	-1.5	3.9	-10.2	-4
Lithuania.....	1.3	2.2	4.6	0.0	2.4	1.8	-9.0	-4
U.S.S.R.....	1.0	1.9	5.3	-0.6	1.7	1.3	-2.9	-7

Sources: Soviet official statistics—1981-90 from *Soyuznyye respubliki: osnovnyye ekonomicheskiye i sotsialnyye pokazateli* (Moscow: Goskomstat Information-Publishing Center, 1991), p. 150; 1991 from reports published by statistical agencies of Commonwealth of Independent States (CIS) and individual countries.

<sup>a</sup> Average annual increase in the sum of output during the five-year period shown over the sum during the previous five-year period.

<sup>b</sup> Preliminary.

Another, more difficult question is whether the economic slide of the late 1980s was preordained by the systemic flaws of the Soviet economy. We would argue that the demise of the system, while per-

TABLE 9. U.S.S.R.: Growth of per Capita Personal Incomes, by Republic, 1981-88.

Republic	Average Annual Percent Change	Annual Percent Change		
	1981-85	1986	1987	1988
Russia.....	1.9	0.0	1.1	3.6
Ukraine.....	2.7	0.7	0.3	3.2
Belarus.....	2.3	3.4	-0.3	1.0
Moldova.....	2.1	1.8	2.1	2.7
Kazakhstan.....	1.4	1.2	1.4	4.0
Kyrgyzstan.....	2.0	1.1	0.4	6.5
Tajikistan.....	1.2	0.5	-1.6	3.2
Turkmenistan.....	1.1	2.3	0.3	1.0
Uzbekistan.....	1.0	-1.7	-3.1	5.0
Armenia.....	1.5	2.8	2.5	4.0
Azerbaijan.....	2.4	0.2	4.2	4.8
Georgia.....	3.5	2.3	3.8	7.5
Estonia.....	1.5	2.4	1.3	4.5
Latvia.....	1.5	1.4	1.5	2.9
Lithuania.....	1.4	4.1	-0.6	6.8
U.S.S.R.....	1.8	0.1	0.9	3.2

Source: Soviet official statistics from *Osnovnyye pokazateli balanso narodnogo khozyaystva SSSR i soyuznykh respublik* (Moscow: Goskomstat Information-Publishing Center, 1990), p. 138.

haps inevitable at some point, was brought forward in time by a particularly unfavorable constellation of developments. Gorbachev's plans were dogged by bad luck in several respects. The downturn in world energy prices after 1985, the Chernobyl' disaster (1986), and the Armenian earthquake (1988) did substantial damage to the economy in addition to inflicting a terrible loss of life. Agricultural weather in 1984-87 was also uncommonly poor.<sup>26</sup>

More important, perestroyka's policies were in important respects ill-conceived, and Gorbachev's partial economic reforms contributed to the collapse of the traditional system. The initial emphasis on investment—to the neglect of the population's desire for higher living standards—was a costly mistake. To make matters worse, by launching his antialcohol campaign, Gorbachev simultaneously dealt a blow to production of a major consumer good and cut state budget revenues. The population, which had always experienced shortages of particular goods and services, found the shortages becoming more general as income growth outstripped the supply of consumption goods.

To explain the popular discontent that flourished in the 1980s, however, one also has to take into account the much greater freedom of expression in printed and spoken dialogue and even in demonstrations and strikes. Glasnost served as a powerful amplifier for the dissatisfaction that lay under the surface before Gorbachev. Perestroyka's failures in improving living standards and reforming

<sup>26</sup> Using regression analysis to estimate weather-related harvest losses, Robert Kellogg found that the Soviet Union sustained 30 billion rubles of farm losses from worse than average weather in 1984-87, or 6 percent of reported production (*Modeling Soviet Agriculture: Isolating the Effects of Weather*, CIA: SOV 88-10054, August 1988, p. 10).

TABLE 10. U.S.S.R.: Growth of Investment Allocations, by Republic, 1981-90.

Republic	Average Annual Percent Change *		Annual Percent Change				
	1981-85	1986-90	1986	1987	1988	1989	1990
	Russia.....	3.5	6.6	9.2	5.9	7.7	4.1
Ukraine.....	3.1	5.3	10.0	2.5	4.0	3.7	1.9
Belarus.....	5.3	9.0	6.0	19.7	-0.2	10.3	10.0
Moldova.....	4.3	5.0	3.1	9.2	3.9	5.9	-0.5
Kazakhstan.....	3.0	6.0	4.9	10.3	7.1	3.5	-2.9
Kyrgyzstan.....	3.3	5.0	5.6	2.6	7.5	1.7	11.3
Tajikistan.....	3.2	7.4	7.9	8.7	8.0	6.8	0.7
Turkmenistan.....	6.8	4.1	8.4	-1.3	4.6	2.3	7.5
Uzbekistan.....	3.9	3.5	2.5	2.7	5.6	-0.5	13.0
Armenia.....	4.2	15.7	6.6	3.6	-11.4	149.1	-4.6
Azerbaijan.....	8.6	-0.7	6.3	-2.0	0.1	-14.4	-3.6
Georgia.....	5.6	0.4	-1.8	7.5	1.0	-1.2	-14.4
Estonia.....	2.1	4.9	7.2	-0.7	8.5	6.2	2.7
Latvia.....	5.2	1.4	9.5	-5.7	-0.2	4.2	-8.2
Lithuania.....	7.4	6.6	14.3	5.1	8.5	-1.8	-10.3
U.S.S.R.....	3.7	6.1	8.4	5.6	6.2	4.7	0.6

Source: Soviet official statistics, from *Soyuznyye respubliki: osnovnyye ekonomicheskiye i sotsialnyye pokazateli* (Moscow: Goskomstat Information-Publishing Center, 1991), p. 173.  
 \* Average annual increase in the sum of investment allocations during the five-year period shown over the sum during the previous five-year period.

TABLE 11. U.S.S.R.: Growth of Investment Project Completions, by Republic, 1981-90.

Republic	Average Annual Percent Change *		Annual Percent Change				
	1981-85	1986-90	1986	1987	1988	1989	1990
	Russia.....	4.3	3.5	6.4	8.1	-0.7	2.6
Ukraine.....	2.7	3.0	8.8	2.9	0.4	0.1	-0.5
Belarus.....	4.7	5.0	2.8	19.6	-5.0	3.6	9.4
Moldova.....	2.8	3.2	-7.0	19.5	-2.3	0.8	-5.9
Kazakhstan.....	3.8	3.1	-1.5	10.7	-2.1	7.0	-5.8
Kyrgyzstan.....	3.8	3.0	-0.8	11.6	-9.5	-2.0	8.0
Tajikistan.....	1.9	5.3	4.3	11.4	0.0	7.8	-8.5
Turkmenistan.....	5.6	3.3	5.3	-3.6	2.5	-2.9	16.9
Uzbekistan.....	4.1	1.7	4.7	0.1	3.4	0.7	7.2
Armenia.....	3.9	5.6	34.2	-26.0	-30.7	116.7	-0.6
Azerbaijan.....	7.9	1.1	-2.5	2.0	-4.3	-18.4	-4.6
Georgia.....	5.3	0.4	-1.2	-6.8	-3.8	-7.3	-13.0
Estonia.....	2.5	4.1	24.3	-11.0	-2.4	-3.9	11.9
Latvia.....	4.0	0.9	3.8	-4.2	-13.7	2.7	-6.2
Lithuania.....	4.6	4.6	10.2	21.0	-13.7	1.6	-16.3
U.S.S.R.....	4.1	3.3	5.9	6.8	-1.3	2.5	-1.9

Sources: Soviet official statistics from *Soyuznyye respubliki: osnovnyye ekonomicheskiye i sotsialnyye pokazateli* (Moscow: Goskomstat Information-Publishing Center, 1991), p. 20; and *Narodnoye khozyaystvo SSSR v 1990 g.* (Moscow: Finansy i statistika, 1991), p. 563.  
 \* Average annual increase in the sum of investment project completions during the five-year period shown over the sum during the previous five-year period.

the economy could not be interred silently as previous campaigns had been. The gulf separating promise and performance was now discussed openly, with fairly obvious consequences for popular perceptions of well-being.

The sudden shift in resource priorities in midplan added to the confusion and disruption in the economy. Because enterprises were not equipped to change gears so suddenly, production dropped, especially in the machine building sector. While the lost production of military hardware was not serious, the methods employed in restructuring the economy set back reform and hurt key industries. The reorientation of the economy toward the consumer was carried out in campaign fashion, by issuing state orders and strengthening central planning. And in the hurry to limit state-financed investment, the crucial energy sector was short-changed. Within a year or two the effect on production, domestic supplies, and export earnings was evident.

When Gorbachev decided to pursue economic reform, moreover, its implementation proved to be partial and contradictory, central control over the economy was lost, and market forces were slow to emerge. Just as economic reforms began to force enterprises out of their accustomed reliance on central plans and orders, the loss of control of the state budget and the disruptions caused by ethnic unrest and republic rivalries wreaked havoc with the traditional distribution system. In addition, the reform, coupled with the rapid demoralization of the party, removed one of the traditional elements of economic administration.

The breakup of the Soviet multinational empire proved to be the final blow to economic activity in the former Soviet economic space. Beginning with ethnic conflicts on the periphery, the desire for autonomy spread to almost all republics. Moscow's belated attempts to reduce the budget deficit, which probably achieved some success in 1990, were overwhelmed by republican refusal to support the union budget in 1991. By the end of the year no monetary or fiscal control worthy of the name remained, and the rate of open inflation accelerated. Republic and even local governments struggled to protect their citizens by limiting exports of food and scarce industrial supplies. The ruble lost its value as a medium of exchange, and factories and workers alike resorted increasingly to barter to sustain commerce. The economic linkages built up in the postwar years were substantially destroyed in a relatively short time. Perhaps only the powerful inertia of the system and the long-standing personal and business relationships that surmounted republic and regional boundaries prevented the economic collapse that many observers predicted or reported.

#### IMPLICATIONS

By early 1992, the new states carved out of the former Soviet Union were struggling to develop political arrangements to realize their newly asserted independence and to construct economies with a greater market orientation. The process promises to be long and difficult, as the experience of the old republics and the new governments in Eastern Europe suggests.

The crucial question for the economies of the new republics is whether functioning nonsocialist economies can be established to make the decisions on production and distribution that the central planners did. The difficulty of accomplishing this has been compounded by the precipitous fall in production since the late 1980s

and its consequences for employment, enterprise finances, and government budgets. Moreover, the republic economies are now separate. Kazakhstan's president, Nursultan Nazarbayev, has claimed that the severing of economic ties among the former Soviet republics and the "collapse of CEMA" (Council for Economic Mutual Assistance) was responsible for 80 percent of the fall in production in the former Soviet Union.<sup>27</sup> One does not have to accept this assertion fully to believe that the restoration of such economic linkages is an extremely important source of economic recovery.

The disagreement over the measurement of Soviet economic performance in the recent past raises questions about the reliability of official statistics in the successor countries during the coming years. In many of these countries, statistical offices are assuming responsibilities they never had when Moscow decided on the procedures and objectives of statistical reporting. Even with technical help from international agencies and Western governments, statisticians will need some time to get their feet on the ground. Moreover, because this process will not proceed at the same pace in the several countries, comparative analysis of economic developments in the former Soviet Union will be skewed if it relies entirely on official statistics.

To obtain accurate measures of economic performance will also be harder for them than it was for the U.S.S.R.'s State Committee for Statistics. With prices soaring and relative prices changing rapidly, estimates of inflation will be much more uncertain than in the past, and official statistics are likely to be badly flawed.<sup>28</sup> This means that measures of real output derived by deflating growth in value of output by price indexes will be even more suspect than the official measures were when rates of inflation in producer and consumer markets were relatively slow. In addition, the burgeoning private activity must be covered in the estimates of GNP. Its omission was already a problem in the 1980s; in the 1990s, economic growth will be seriously understated if the statistical agencies do not take it into account. Thus far, systematic reporting on the private sector is in its infancy in the new republics.<sup>29</sup>

Until inflation is brought under control and the republic statistical offices have gained more experience, assessments of republic economic performance will have to be undertaken with some diffidence. Fully articulated alternative measures like those offered by CIA for the U.S.S.R. are not likely to be available for the republics. Still, the need for alternative measures of economic trends will be greater in the transition years for these economies than it was for

<sup>27</sup> Nazarbayev was promoting his idea of a CIS economic council at a press conference following a Moscow meeting of CIS leaders (*FBIS Daily Report: Central Eurasia*, 7 July 1992, p. 10).

<sup>28</sup> Conflicting claims regarding inflation rates figured prominently in the Russian debate over economic policy in the first half of 1992. Critics in the Supreme Soviet denounced the government's consumer price index, and it was alleged that producer price indexes were even more unreliable because most transactions took place according to unmonitored contractual agreements rather than at posted prices.

<sup>29</sup> In mid-1992, *Kommersant*, a Russian business weekly, reported the formation of Kominform by the Russian State Committee for Statistics and its branches as a source of commercial information. It said that Kominform's data on state-controlled enterprises would be especially useful "since they are known to provide reports accurately." But "information on enterprises of different forms of property, which are not so accurate in statistical accounting . . . is practically impossible to come by from official statistical data banks." Very likely, the Russian statistical agency, which took over much of the U.S.S.R. Goskomstat, does at least as well as other republic agencies in incorporating private activity in its national accounts.

the Soviet Union in the past. In these circumstances, a judicious search is warranted for a short list of physical indicators like those that underlie the GNP estimates presented in this paper.



## APPENDIX

MILESTONES IN ECONOMIC POLICY AND PERFORMANCE DURING THE  
GORBACHEV ERA

- March 1985 Gorbachev becomes General Secretary, makes economic revitalization a top priority
- 1985 Gorbachev outlines initial strategy: short-run reliance on human factor to improve productivity and weed out incompetents; in longer term, counts on organizational changes and modernization of industrial base
- Gorbachev presses antialcohol campaign, cleans house in Council of Ministers and Central Committee economic departments
- November 1985 Draft guidelines for 1986-90 plan feature acceleration in industrial and agricultural growth, give special prominence to machinery sector as prime mover in modernization campaign; plan depends on unrealistic assumptions about conservation and productivity
- February 1986 At Communist Party congress, Gorbachev proclaims "reasonable sufficiency" guideline for defense programs
- 1986 Leadership reorganizes foreign trade apparatus, establishes guidelines for setting up joint ventures between Soviet enterprises and foreign partners
- Leaders criticize failure to improve quality of output, set up system of state quality inspection
- Glasnost and democratization in economy encounter government and party resistance
- Investment surges while per capita consumption stagnates
- State budget deficit begins to climb
- June 1987 Supreme Soviet and Central Committee approve guidelines for "new economic mechanism" to include enterprise self-financing, narrower scope of state plans, price and wage revisions, greater freedom to engage in international trade
- October 1987 Ryzhkov sets out program for expanding defense industry involvement in civil production

**MILESTONES IN ECONOMIC POLICY AND PERFORMANCE DURING THE  
GORBACHEV ERA—CONTINUED**

- October 1987** 1988 plan reflects new emphasis on consumer  
**1987** New quality control program disrupts industry  
 Investment program falls far behind because of  
 confusion in construction and machinery short-  
 ages  
 State budget deficit continues to climb
- January 1988** Broad implementation of reforms approved in  
 1987 begins
- Fall 1988** Gorbachev raises 1989 targets for production of  
 consumer goods, announces cuts in defense out-  
 lays and state investment, tasks defense sector  
 with greatly increased support for civilian  
 economy, stretches out reform process
- 1988** State budget deficit continues to climb
- January 1989** Implementation of 1987 reforms expands to  
 entire economy, contributes to disruption of  
 traditional supply relationships
- October 1989** Abalkin reform program calls for gradual tran-  
 sition from state to other forms of ownership,  
 development of market-oriented financial  
 system
- December 1989** Supreme Soviet approves Ryzhkov reform and  
 stabilization program—watering down of Abal-  
 kin program
- 1989** Economy sputters as production of energy and  
 basic materials falls; transportation and distri-  
 bution problems, exacerbated by strikes and  
 ethnic tensions, interfere with supplies  
 Investment program stalls as unfinished con-  
 struction rises  
 Spending on defense declines, led by cuts in  
 weapons procurement  
 Open and repressed inflation evident; short-  
 ages intensify, leading to rationing in many  
 localities  
 International financial position deteriorates as  
 U.S.S.R. borrows to pay for increased imports  
 of consumer goods and industrial equipment

**MILESTONES IN ECONOMIC POLICY AND PERFORMANCE DURING THE  
GORBACHEV ERA—CONTINUED**

- August 1990** Shatalin reform program calls for market determination of output and prices, increase in republic authority over economic policy and reforms
- October 1990** Gorbachev reform program is adopted, providing for gradual elimination of state controls over output and prices, sale or transfer of property to owners other than state, eventual convertibility of ruble to hard currency
- 1990** Central and republic governments at loggerheads over wide range of economic issues, including reforms  
Regional autarky disrupts economic ties  
Soviet economy passes from stagnation to decline  
Investment and defense spending continue to fall  
Inflation accelerates, shoppers sweep store shelves clean, shortages of energy and industrial materials worsen, barter proliferates