

Soviet Economic Structure and Performance

SECOND EDITION

**Paul R. Gregory
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Compositor: *American Book-Stratford Press, Inc.*
Art Studio: *Vantage Art Inc.*

SOVIET ECONOMIC STRUCTURE AND PERFORMANCE, *Second Edition*

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Library of Congress Cataloging in Publication Data

Gregory, Paul R

Soviet economic structure and performance.

Includes bibliographies and index

1. Russia—Economic conditions—1918—
2. Russia—Economic policy—1917— I. Stuart,
Robert C., 1938— joint author. II. Title.
HC335.G723 1981 330.947'0853 80-24511
ISBN 0-06-042508-3

Preface

Since the appearance of the first edition of this book, new material has become available that adds substantially to our knowledge of the Soviet economy. The study of Soviet economics continues to be drawn into the mainstream of contemporary economic analysis, with increasingly sophisticated studies of Soviet production technology, industrial structure, consumption and saving behaviors, and the impact of imported technology on the Soviet economy. Major studies of Soviet income distribution and inflation have been undertaken. These works shed new light on the reasons for the declining rate of Soviet growth, on the measurement of Soviet inflation, and on the prospects for reliance on imported technology. An entirely new source of information has become available: that supplied by recent emigrants from the Soviet Union, many of whom bring with them special insights concerning the operation of the economy. Moreover, public access to analyses of the United States intelligence community has been increased, so that now independent evaluations of Soviet military power and the impact of the military sector on the economy are possible. Government studies of Soviet economic performance are published with greater frequency and supply the foundation for more up-to-date evaluation of that performance.

Subsequent events have not required us to amend major assessments of the Soviet economy since the appearance of the first edition in 1974. Soviet output and productivity growth continue to falter, so much so that our evaluation of long-term Soviet performance must be lowered. The USSR has now experienced two decades of slow growth. Economic reform continues to remain "dead," with little prospect of its revival. Solutions to the problem of lagging technological innovation have yet to be found. The most substantive amendments are the growing recognition of the importance of informal market mechanisms (the "second economy") and the Soviet's increasing trade with the West in the 1970s. Yet it is our opinion that the Soviet economic system of the 1930s survives in its

fundamental form to the present day and that the description of Soviet resource allocation found in the first edition does not require major amendment.

The chief organizational changes of the second edition are the omission of the lengthy discussion of socialist economic theory (the socialist controversy), the explicit treatment of Soviet military power, and the increased attention to foreign trade. The historical sections have been updated to include recent studies of the tsarist period and the 1920s, and a brief discussion of World War II has been added. The cited data have been updated to 1979 and 1980 where possible. We seek to summarize the Western and Soviet literatures on the Soviet economy, but our survey must be selective and will omit valuable studies conducted by Western and Soviet scholars. For this reason, we have sought to include more references in the selected bibliographies at the end of each chapter.

This book is developed around four central themes and is subdivided into three parts: (1) the evolution of the Soviet economic system (economic history), (2) the process of resource allocation in the Soviet economy, (3) reform of the Soviet command economy, and (4) the economic performance of the Soviet economy. We have attempted to make each part as self-contained as possible, which has necessitated a small amount of repetition; but in view of the length of the book, this practice seemed desirable. It is assumed throughout that the reader has a knowledge of economic theory equal to that normally acquired in a standard introductory course. The more advanced concepts have been relegated to footnotes and appendixes.

The authors would like to acknowledge and thank a large number of scholars for their direct and indirect participation in this project. In the latter category, Abram Bergson and David Granick must be singled out for their guidance during our years of graduate study, and the Harvard University Russian Research Center must be noted as having provided the intellectual stimulation that played an important role in the project's conception. In the direct participation category, thanks are due to Carl McMillan, Franklyn D. Holzman, Holland Hunter, Keith Bush and H. Peter Gray, all of whom kindly commented on some aspect of the first edition of this study. Valuable suggestions for revision of the first edition were supplied by James Millar, Thomas Wolf, Edward Hewett, Earl Brubaker, Vladimir Trembl, Gertrude Schroeder Greenslade, Frank Durgin, Anna Kuniatsky, and Susan Linz. For the conception, development, and presentation of this work, the authors bear sole responsibility.

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Preface xi

Introduction 1

Successes and Failures of Soviet Socialism 1

Relevance of Soviet Economics 5

The Role of Value Judgments 8

Purpose and Scope 11

Part One ORIGINS OF SOVIET ECONOMY 13

1 Economic History of Russia to 1917 15

Industrial Growth Under the Tsars 16

Russian Agriculture Under the Tsars 18

Economic Growth in Russia: An Overview 24

Russia's Dependence Upon the West for Capital 31

Was Russia Underdeveloped in 1914? 32

2 The Economic Precedents of the Twenties:

**The Soviet Economy Under War Communism and the
New Economic Policy (1918–1928) 37**

War Communism (1918–1921) 37

The New Economic Policy (1921–1928) 46

The Precedents of the 1920s 57

3 The Soviet Industrialization Debate (1924–1928) 63

The Setting of the Soviet Industrialization Debate 64

The Marxist-Leninist Legacy 66

Preobrazhensky—Unbalanced Growth of Industry 71

Shanin—Unbalanced Growth of Agriculture 75

Bukharin—Balanced Growth 78

The Outcome of the Soviet Industrialization Debate	81
Appendix to Chapter 3: Mathematical Models of the Soviet Industrialization Debate	88

4 The Foundation of the Soviet Planned Economy: Planning and Collectivization (1928–1945) 93

The Planning Debate: The Geneticists Versus the Teleologists	93
The Evolution of the Planning Structure	95
The Decision to Collectivize	99
The Collectivization Process	103
The Immediate Impact of Collectivization	105
The Soviet Economy During World War II	107
Conclusions: Soviet Economic History to 1945	109

Part Two HOW THE SOVIET ECONOMY OPERATES 111

5 How the Soviet Economy Operates: Planning and Pricing 113

Introduction to Soviet Resource Allocation	113
Political Institutions and Control of the Economy	114
Supply and Output Planning	120
Money in the Soviet Economy	140
The Enterprise Plan and Financial Controls	142
Public Finance and Financial Planning in the Soviet Union	143
The Soviet Banking System	152
The Soviet Price System	154
The Second Economy of the Soviet Union	170

6 How Resources Are Allocated in the Soviet Union—The Soviet Manager, Labor, and Capital 175

The Soviet Manager	175
Labor Allocation in the Soviet Union	186
The Allocation of Capital in the Soviet Economy: The Investment Decision	208
Summary: Resource Allocation in the Soviet Union	219

7 Soviet Agriculture 223

The Organization of Soviet Agricultural Production: The Kolkhoz and the Sovkhoz	223
Agricultural Planning: The Kolkhoz	228
Changing Patterns in Soviet Agriculture: The Khrushchev Era	231

Changing Patterns in Soviet Agriculture: The Brezhnev Years	241
Soviet Agriculture and Economic Development	243
Performance of the Agricultural Sector	248
Soviet Agriculture: An Overview	254

8 Soviet Foreign Trade 261

Trade in the Soviet Planned Economy	261
The External Environment: The Socialist Countries	271
Soviet Trade with Capitalist Countries	275
The Structure and Volume of Soviet Commodity Trade	279
Trade in Soviet Economic Development	283
Soviet Foreign Trade: Prospects for the Future	286

Part Three SOVIET ECONOMIC REFORM, GROWTH, AND PERFORMANCE 291

9 Soviet Economic Reform: Theory, Practice, Prospects 293

Two Currents in Reform Thinking: Historical Background	294
Why the Economic Reform Discussion?	297
Reform Versus Organizational Change	300
Economic Reform: Debate and Experimentation	301
The Official Reform of 1965	306
Implementation of the 1965 Economic Reform	310
Reform of the Reform	313
Industrial Price Reform	316
The Reform in Perspective	318
Economic Reform Alternatives: Mathematics and the Market	321

10 Soviet Economic Growth and Performance 327

Soviet Economic Growth	329
Dynamic Efficiency and the Growth of Productivity	338
Soviet Static Efficiency	346
Equity of Income Distribution in the Soviet Union	351
Consumer Welfare in the Soviet Union	355
Economic Stability (Security) in the Soviet Union	361
Soviet Economic Performance: An Assessment	365

**11 Soviet Performance: Military Power, Technology,
Economic Development, the Environment 369**

Further Performance Indicators 369

Soviet Military Power 371

Soviet Technology 377

The Soviet Development Model of the 1930s 381

Soviet Environmental Quality 389

12 Conclusions and Prospects 397

Achievements 397

Problems of the Seventies 400

Options for the 1980s 401

Prospects to the Year 2000: A Postscript 404

Index 409

Introduction

The Russian Revolution ushered into being what would become the first important experiment with centrally planned socialism. Russia in 1917 was a large, economically promising land, populated by 144 million people of diverse ethnic backgrounds engaged primarily in agrarian pursuits. Its economic development had been retarded by the social unrest, political instability, feudal vestiges, and low educational achievement of the tsarist period. Russia would provide a rigorous test of the viability of the socialist experiment.

SUCSESSES AND FAILURES OF SOVIET SOCIALISM

Russia became a socialist economy with the October Revolution of 1917 and instituted central planning in 1928 under the First Five Year Plan. Thus we have a sufficiently long time period for viewing the Soviet system in perspective. Yet unbiased evaluation of Soviet economic performance is difficult, since many in the West are unsympathetic to the Soviet political system. Nevertheless, amidst a degree of contention, there is substantial agreement concerning the following achievements of the first 65 years of Soviet government.

Possibly the most notable achievement from the Soviet viewpoint is a political one—the expansion of communism. The magnitude of this achievement becomes evident when one compares the tenuous control exercised by the Bolshevik regime over the former Russian Empire in 1918—encircled by unfriendly capitalist countries and plagued by civil war, foreign intervention, and a shaky economy—with the current situation in which roughly one-third of the world's population lives under some form of communism. The Soviet Union is no longer encircled by unfriendly capitalist countries; rather it has fashioned a bloc of (sometimes reluctant) socialist allies in Eastern Europe to act as buffers between itself and the capi-

2 INTRODUCTION

talist world. The limits to the expansion of the communist system remain to be determined and will depend upon the course of Eurocommunism in Western Europe, the Soviets' willingness to use military force in the Third World, and the attraction of the communist system to developing countries. Ironically the major political threat to the Soviet Union—The People's Republic of China—comes from within the socialist world.

Second, the Soviet command economy has failed to succumb to alleged internal contradictions after more than a half century of operation, though at one time some prominent Western economists saw such a result as inevitable. We use the term "command economy" to indicate that resource allo-

TABLE 1 Economic Indicators—USSR and USA Comparisons, 1981

	USSR 1978	USA 1978
GNP (billion 1978 US \$)	1254	2108
Population, midyear (million persons)	261	219
Per capita GNP (1978 US \$)	4800	9650
Grains (million metric tons)	237	267
Milk (million metric tons)	95	55
Potatoes (million metric tons)	86	16
Meat (million metric tons)	15	25
Crude oil (thousand barrels per day)	11,200	8700
Natural gas (trillion cubic feet)	13.1	19.5
Electric power (billion kilowatt-hours)	1202	2437
Coal (million metric tons)	663	600
Primary energy production (million barrels per day of oil equivalent)	25.4	30.0
Crude steel (million metric tons)	151	124
Cement (million metric tons)	127	81
Aluminum (thousand metric tons)	2600	4360
Refined copper (thousand metric tons)	1460	1811
Iron ore (million metric tons)	244	82
Plastics (million metric tons)	3.5	16.3
Bauxite (thousand metric tons)	8500	1790
Tractors (thousands)	576	197
Automobiles (million units)	1.3	9.2
Trucks, including buses (million units)	0.8	3.7
Turbine production (million kilowatts)	19.5	27.9
Refrigerators in use (per thousand persons)	226	353
Washing machines in use (per thousand persons)	203	263
Radios in use (per hundred persons)	24	205
Television sets in use (per hundred persons)	24	62
Housing construction (square meters per capita)	0.42	1.07
Gold production (million troy ounces)	8.8	1.0

SOURCE: National Foreign Assessment Center, *Handbook of Economic Statistics, 1979*, ER79-10274, Washington, D.C., August 1979, pp. 10-20.

cation basically proceeds according to administrative orders rather than to market signals. The long-run ability of the Soviet system to function without private ownership of the factors of production and without profit motivation is no longer seriously questioned. The Soviet Union has established itself as the world's second largest economic power (the magnitude of which Table 1 readily demonstrates), and it would now be foolish to question its economic viability. Instead, the performance of the Soviet command economy relative to market economies is now the subject of contention, surely a lesser question than whether the system can operate at all.

Third, the speed with which the Soviet Union transformed itself from relative economic backwardness into industrial and military strength must be listed as a major achievement. Russia in 1917 was predominantly agricultural, with high mortality rates, especially among infants. Nearly 60 percent of the population was illiterate. The industrial sector's shares of output and labor force were quite small, and the domestic machinery sector was poorly developed, requiring heavy dependence upon the capitalist world for capital equipment. By 1937 most of the indicators had been reversed; the USSR had been transformed into an industrial economy without reliance upon foreign aid or extensive imports from the West (with the exception of industrial technology). Both during and after the period of rapid industrialization, Soviet GNP grew at high rates by international standards, all but declining in recent years. Commenting on the speed of Soviet industrialization in the 1930s, Simon Kuznets, a Nobel laureate scholar of modern economic growth, writes:

As in all countries, economic growth in the USSR meant a decline in the shares of national product originating in, and labor force attached to, the A [agriculture] sector. But the rapidity of this shift was far greater in the USSR than in the other developed countries . . . the shift of labor force out of agriculture of the magnitude that occurred in the USSR in the 12 years from 1928 to 1940 took from 30 to 50 years in other countries . . . and the same was true of the decline in the share of the A sector in national product. A comparable shift took from 50 to 60 years in most other countries.¹

Fourth, by devoting a larger share of resources to defense than do the United States and Western Europe, the Soviets have produced a defense capability equivalent to or superior to that of the United States. Over the past decade, the Soviet Union has outspent the United States by substantial amounts both in the aggregate and in the important areas of strategic and general purpose forces.² Thus the Soviets have been able to achieve military

¹ Simon Kuznets, "A Comparative Appraisal," in Abram Bergson and Simon Kuznets, eds., *Economic Trends in the Soviet Union* (Cambridge, Mass.: Harvard University Press, 1963), pp. 345, 347.

² National Foreign Assessment Center, *A Dollar Cost Comparison of Soviet and U.S. Defense Activities, 1968-78*, SR79-10004, Washington, D.C., January 1979, pp. 6-11.

4 INTRODUCTION

parity (or even superiority) vis-à-vis the United States and Western Europe, utilizing an economic base 60 percent that of the United States and 30 percent that of the North Atlantic Treaty Organization (NATO) countries combined.³

On the other hand, the weaknesses exhibited by the Soviet economic system are equally well-known and are not seriously contested: the Soviet economy's inability to provide consistent increases in living standards, especially during the initial Five Year Plan periods, and its inability to produce an assortment of consumer items corresponding to the demands of the population for quantity and quality are serious problems. Second, in terms of absolute economic efficiency, the Soviets have tended to generate less output per unit of input, by their own admission, than the American and most Western European economies. This relative economic inefficiency has become more bothersome with the slackening pace of population and labor force growth, rising defense spending, and the growing reluctance of Soviet consumers to accept low-quality merchandise. Various attempts to solve the problems of consumer supply and industrial inefficiency through experiments and reform have not proven successful. Third, Soviet economic successes have often been achieved at the cost of human life, political freedom, and material deprivation, making an overall evaluation of the system extremely difficult. The most immediate cost of rapid industrialization was the establishment of dictatorial control over the population in order to implement the extreme austerity of the First Five Year Plan.

Also, the agricultural sector has thus far failed to be an adequate and reliable supplier of meat and vegetable products. In addition, the output of the major grain crops is still subject to large annual fluctuations, and the regime has been forced to negotiate long-term agreements to import substantial amounts of grain from the West. While these imports do not necessarily prove the failure of Soviet agriculture (most industrialized countries import food products), they are nevertheless a disappointment to a Soviet leadership that has devoted considerable resources to improve agricultural performance. The increased reliance on the West for basic food supplies and the periodic shortages of food staples in a large country with a high concentration of employment in agriculture point dramatically to the Soviet Union's unresolved agricultural problem.

The inability of the Soviet economy to reverse the decline in the rate of economic growth that became evident in the early 1960s must be cited as a final weakness. Although Soviet growth remains respectable by international standards, it has fallen below that of some fast-growing capitalist countries (Japan, West Germany) in the postwar era. To a country that has long cited rapid growth as a sign of the superiority of the communist system, the lagging rate of growth must be a serious disappointment.

³ National Foreign Assessment Center, *Handbook of Economic Statistics*, 1979, ER79-10274, Washington, D.C., August 1979, p. 10.

RELEVANCE OF SOVIET ECONOMICS

Before proceeding further, it is necessary to ask what relevance a study of the Soviet economy has to contemporary problems and issues. A general answer to this question must suggest that examination of the Soviet command-type economy points toward the substitutions that are required if the market mechanism is to be replaced. Thus one can better understand not only the functions that the market performs without central direction but also the gains and sacrifices involved in its abolition. This issue has considerable relevance for the growing concern over the shortcomings of capitalism: pollution, unemployment, persistent inflation, and so on. Economies cannot function in a vacuum without a guiding mechanism, be it a market, central plan, or some combination of the two. Therefore the costs and benefits of alternative guidance mechanisms are matters worthy of continuing investigation.

Traditionally, economics is defined as the study of how scarce resources are allocated among competing uses. In the United States, for example, scarce resources (generally those that command a positive price as determined by the market) are predominantly allocated among competing uses via the interaction of supply and demand. Relative prices form the only common information required by the participants in the market (consumers and producers) to make their (consumption and production) decisions. Of course, there are major exceptions to this pattern of market allocation—such as the resources allocated by the government budget—and there are many imperfections—such as monopoly, misleading advertising, ineffective government regulation, and labor immobility—that may cause the market to perform its allocative function poorly.

The Soviet experience suggests that an economy can function by command without markets to allocate scarce resources. In fact, even the common method of defining “scarcity” is absent in such an economy because, with only minor exceptions, there are no market prices. There are, of course, exceptions to the rule of command allocation in the Soviet Union. Consumer goods, once produced in planned quantities, have generally been allocated among consumers by the market. Also, regional and occupational allocation of labor is generally achieved by the manipulation of wage differentials (in addition to a degree of physical planning). Moreover, much economic activity is carried out in the unplanned “second economy”—a subject of discussion in Part Two. Nevertheless, the most important production and allocation decisions are made not by the market but by a substitute mechanism—a *central plan*—that embodies the goals of the system’s directors. Prices no longer allocate resources but serve instead largely as accounting units. The party specifies the economic objectives of society and ensures that they are enforced by means of party control over the economic and political hierarchy.

In sum, by showing how an economy operates in the absence of a market and by revealing the substitutions that must be made for it, the Soviet command economy provides insights into the operation of our own market system. In making such comparisons, however, one must guard against the fallacious technique of comparing the problems of planning reality with the elegance of the theoretical market model, or for that matter comparing perfect planning with market imperfections.

The relevance of alternative economic systems—private enterprise or centrally planned socialism and combinations thereof—to the problems of developing countries provides a second area of relevance to contemporary issues. Should a developing country emulate the Soviet or the Western market pattern to break out of the vicious circle of stagnation and poverty? Or should it combine features of both models?

The USSR was able to transform itself into an industrialized economy within a short period of time largely with minimal reliance on market forces, thus freeing central planners to maximize the speed of industrialization. Whether this rapid and comprehensive transformation could have been handled within a market context remains an open question. For it was the combination of planning and political dictatorship that permitted the realization of high investment ratios and the rapid expansion of the quantity and quality of industrial labor that, in large measure, determined its pace. The Soviet model channeled investment into selected economic sectors (neglecting domestic consumption) to develop a domestic base for heavy industry—with minimum dependence on foreign trade. The major phases of industrialization were accomplished within one decade. Would this Soviet-style industrialization “work” for developing economies in the same way, or are there crucial differences that mitigate against the use of the Soviet model and that require the adoption of the more evolutionary “aid and trade” path? Answers can emerge only from an in-depth study of Soviet economic development—a central objective of this work.

The international arms race and the general instability of world peace provide a third area of relevance. It is common to equate economic and military power, although the relationship has become more tenuous in this age of nuclear weapons, mob anarchy, and guerrilla warfare. Yet despite obvious exceptions, the equation still holds at base: for economic capacity eventually imposes limits on military capability as defense and domestic interests compete for available capital resources. These limits may take a variety of forms; for example, an inflation that the public is unwilling to accept, or the failure to meet investment and consumption objectives as resources are diverted from the civilian economy.

Thus the current and future economic potential of the Soviet Union is important as it ultimately relates to military power. Questions that are relevant in this regard are: Can the Soviets return to the high growth rates of the early postwar era? Will lagging economic performance affect the Soviet

stance toward arms limitation negotiations? Will the Soviet Union be forced into greater reliance on (and cooperation with) the West? Will the Soviets lose their self-sufficiency in oil production and be pushed into the struggle for Mideastern oil? How these questions are resolved will have a crucial impact on world affairs for the remainder of this century.

A fourth reason for studying the Soviet economy is that we perhaps have something to learn regarding the operation of our own public sector. The Russians have had more than 61 years of experience with the operation of state enterprises and industrial ministries in which profit maximization has not been the primary motivation. While the appropriate scope of government activity remains a subject of continuing debate in our economy, there is general agreement that government must supply certain goods and services many of which are not subjected to a "market test" but which should ideally be provided at a minimum cost of scarce resources. Can we learn from the Soviet experience (and mistakes) in the field of public enterprises, for example, to encourage cost efficiency in government enterprises (for instance, the proposed federal agency to develop synthetic fuels) and in cost-plus pricing defense industries? We would probably agree that the problems faced by the Soviet state enterprise and by our public enterprises and government agencies are similar, which suggests that we could benefit from the Soviet experience in this area, especially if government activities continue to expand into problem and crisis management areas, such as energy production and allocation, housing construction and finance, and so on.

Market economies could perhaps benefit from Soviet experience in yet another crucial area in which the unregulated market fails to provide satisfactory results. Whether we consider pollution and other environmental problems to be functions of the type of economic system or, more likely, characteristics of the industrialization process itself, it behooves us to consider how a socialist command economy copes with ecological problems. Time may not be adequate to find answers by experimenting within a particular system; therefore the experiences of other systems should provide invaluable data upon which to base policy decisions.

A final reason for learning about the Soviet economy relates to the growth of trade between East and West, with the West supplying wheat and industrial technology in return for the natural resources of the USSR. The development of the complex machinery for implementing trade and economic relations in general between command socialist and market economies—with their concomitants of credit mechanisms, currency valuations, and cooperative arrangements—must rest upon the mutual understanding of how each economic system functions.

Although trade with the Soviet Union remains relatively small, it nevertheless can have a significant effect on Western economies in specific areas. Soviet wheat purchases have markedly affected food prices in the