

CHAPTER 1

INTRODUCTION

OBJECTIVES OF THE STUDY

The objective of this study is to estimate the real national income of tsarist Russia during its "industrialization era" from 1885 to 1913. The two major studies of Russian industrialization by Alexander Gerschenkron and Raymond Goldsmith¹ agree that an upsurge in the rate of growth of industrial output occurred in the late 1880s, after a long period of sluggish growth following the 1861 peasant emancipation. Industrial growth was retarded by the world depression at the turn of the century and again by the civil unrest of 1905 but resumed thereafter in full vigor until the outbreak of World War I.

This study of tsarist national income investigates Russia's industrialization era. My estimates take 1885 as their starting point and end in 1913, the last year of "normal" economic activity prior to the outbreak of World War I. It thus depicts the growth of Russian real national income in the most favorable possible light. The literature is in agreement that rapid and sustained growth of aggregate output would have been difficult to achieve before the abolition of serfdom and prior to the construction of a rail network in a land mass as large as that of the Russian Empire.² Raymond Goldsmith's national income figures for the subperiod 1860 to the mid-1880s confirm that the growth of Russian national income was indeed slow by international standards during this early period, and scholars blame both the stubborn persistence of feudal institutions and the poor transportation system for this outcome.³

There are two reasons for devoting attention to Russian national income. The first is that, although the empirical record of the Soviet economy during the era of centralized planning is now well established, relatively little is known about the economic base the Bolsheviks inherited from their tsarist predecessors. Our ignorance is equally profound concerning the transition period from World War I to the

initiation of the first five-year plan in 1928, a period that witnessed the terrible destruction of the first global war, a violent upheaval of established political and social institutions, a civil war, and tentative experiments to establish a new socialist order. It is no wonder therefore that the pre-1928 heritage of the Soviet economy remains ill defined.

EVALUATING TSARIST AND SOVIET ECONOMIC PERFORMANCE

The record shows that economic growth during the Soviet plan era has been indeed rapid by international standards, albeit declining in recent years.⁴ On this point, both Western and Soviet authors agree. The record also shows that this growth was purchased at a high cost in the form of the rapid (and sometimes "forced") expansion of conventional inputs.⁵ Insofar as the utilization of labor and capital inputs imposes the economic costs of sacrificed current consumption, leisure, and household production, an evaluation of the success of the Soviet economic system in accelerating the expansion of production potential must deal with the hypothetical question of "what would have been" under a capitalist regime. Answers to such counterfactual questions must be speculative in nature, but the historical behavior of real national income during the tsarist era provides at least a starting point.

If one accepts a "planners preference" utility standard in the Soviet case,⁶ the rate of expansion of real output takes on primary importance in any evaluation of Soviet economic performance, for a consistent theme of the Soviet leadership has been the primacy of the growth objective. To this end, resource allocation mechanisms and policies were adopted for the expressed purpose of accelerating growth above what would have been under a market allocation system. The magnitude (or existence) of this growth acceleration must therefore serve as the principal measure of the payoff of adopting the Soviet economic system, and the costs of the system must be weighed against this payoff.

The transitional era from the 1917 revolution to 1928 also plays a prominent, but to this point unheralded, role in the evaluation of Soviet economic performance. The October Revolution set into motion a process of violent and disruptive transition that caused a substantial

loss of real output. The established political order was overturned, ownership of property, with the exception of agriculture, was transferred from individuals, the crown, and the church to the Bolshevik state. Opposition to these changes prompted a bloody civil war, the outcome of which was by no means predetermined. Even after the termination of civil hostilities, an additional seven years of experimentation (and recovery) were required before the formulas of centralized planning and collectivization were adopted.

If, as Simon Kuznets has argued,⁷ economic disruption is an inevitable concomitant of the transition from capitalism to planned socialism, the loss of output and of foregone economic growth during the transition must be incorporated in the assessment of Soviet growth. Adding a decade of zero growth to a half century of rapid growth, for example, can markedly affect the assessment of the Soviet growth performance. Should the economic upheaval of the transition period be regarded as a historical curiosity or as an integral and inevitable feature of the transition to planned socialism?

There is yet another reason for interest in the transition period. Received doctrine, as handed down by Soviet and Western scholars,⁸ maintains that the five-year plans were initiated at a time when the labor and capital resources, intact from the tsarist era, were stretched to the limits of utilization. As the story goes, the recovery to prewar output levels was completed in the mid-1920s. Much physical capital had been destroyed during the war and civil war, and the Soviet economy was confronted in the late 1920s with a severe "capital replacement crisis."⁹ In fact, this was the subject matter of the "Soviet industrialization debate" of the mid-1920s: How to expand the industrial capital stock at a rapid rate (to "build socialism") without sowing the seeds of a destructive hyperinflation? The answer proffered by the Soviet leadership under Stalin was a massive infusion of investment into heavy industry accompanied by a precipitous decline in the share of consumption, and it was this investment drive that enabled the Soviet Union to transform itself into an industrial economy and to embark upon a path of high secular growth.

In the research presented in this book, I reopen the issue of the transition period because I feel that the evidence supporting the conventional interpretation is not convincing. It is based largely

upon official Soviet calculations made in the late 1920s,¹⁰ which, although most likely superior to the statistical pronouncements of the 1930s, suffer from serious deficiencies. This matter is important because the speed of recovery is at issue as is the interpretation of the early five-year-plan era. If the economic recovery to prewar levels was not complete at the beginning of the first five-year plan, then a portion of output growth during the 1930s must be attributed to economic recovery rather than to the more difficult expansion of the production possibilities frontier.

THE TSARIST ECONOMY AND THE ECONOMIC HISTORY OF EUROPE

Scholarly interest in the tsarist economy transcends its importance as a base line for evaluating Soviet performance. The Russian economy during its industrialization era is a case study of economic growth under conditions of relative backwardness. The military significance of Imperial Russia need not be emphasized. It was the Russian army that ended the Napoleonic domination of Europe, and the aura of Russian military might left its imprint on European relations from the eighteenth century to 1917. The Russian Empire had a population of some 162 million on the eve of World War I, some 2.5 times that of its largest European neighbor, Germany, and larger than the United States by a factor of 1.6. In terms of volume of industrial production, Russia ranked fifth in the world, behind the United States, Germany, the United Kingdom, and France. Russia was the world's fourth largest steel producer and was in second place in petroleum production. In 1913 Russia produced 123 million metric tons of cereal products against Germany's 85 million and France's 31 million. Russia's major competitor in the world cereal market, the United States, produced approximately 150 million metric tons of cereals,¹¹ a figure that illustrates the much higher per capita cereal output of the United States and the relative backwardness of Russian agriculture.

Although the Russian Empire ranked high on the world's economic and military ladder, this ranking was due to its sheer size. According to Soviet estimates made in 1927, Russia's 1913 per capita income was 15% of United States, 22% of British, 33% of German, 50% of Italian and Austro-Hungarian per capita income, and was roughly equal to that of

Bulgaria and Rumania.¹² Independent estimates made by the author for earlier years confirm these rankings,¹³ and Russia's low per capita income ranking relative to the major industrialized countries is really not subject to dispute.

The low per capita income ranking is indicative of Russia's relative technological backwardness, a deficiency thought to be more striking in agriculture than in industry. This theme is prominent in the writings of Alexander Gerschenkron,¹⁴ who singled out the retention of communal agriculture and restrictions on agricultural labor mobility as the major culprits. The Gerschenkronian view of the strictures on Russian peasant agriculture may ultimately prove to be exaggerated, for this study shows that income (and productivity) differentials between the city and countryside were likely less extreme and the performance of agriculture was likely better than those depicted by Gerschenkron.¹⁵

The growing technological backwardness of the Russian economy is reflected in both statistical and military events. Although one cannot document this with any precision, the best assumption is that very large disparities in per capita income (and output per worker) did not exist between Petrine Russia and Europe.¹⁶ By the time of the 1861 peasant emancipation, however, Russian per capita income was somewhere between one-third and one-half that of Great Britain, and by 1913 it was approximately one-fifth.¹⁷ What underlies this trend is not the stagnation of the Russian economy as is commonly assumed¹⁸ but the more rapid relative per capita growth of Russia's European competitors as they entered the process of modern economic growth. Russia's relative decline can also be seen from its waning military fortunes. From the repulsing of the Napoleonic invasion in 1812 to humiliating losses to smaller but technologically superior foes in the Crimean War (1855) and the Russo-Japanese War (1904-5), Russia's declining military fortunes paralleled its relative economic fortunes.

Thus Russia, like Japan, entered the second half of the nineteenth century increasingly cognizant of its growing economic backwardness, and it was the Russian response to this backwardness that has attracted the attention of economic historians. As formulated by Alexander Gerschenkron in his noted theory of relative backwardness,¹⁹ the Russian state is pictured as being compelled by the growing disadvantages of technological inferiority to embark after the Crimean

defeat upon a deliberate program of forced industrialization, a program that, according to Gerschenkron, bears some resemblance to Stalinist policies of the 1930s. Before this, the Russian state had been content to forgo industrialization. Mass education and railroad construction were viewed as possible threats to the established political order and were even discouraged. Now forced into a pro-industrialization stance, the Russian bureaucracy turned to the promotion of industrialization. Lacking an indigent entrepreneurial class, the state (more accurately, the Ministry of Finance) fostered railroad construction through loan and profit guarantees and direct state ownership. Markets for Russian heavy industry were guaranteed by protective tariffs and government purchases. Foreign capital and foreign entrepreneurs were actively courted, and the Ministry of Finance, by pursuing a consistent policy of balanced budgets and the withdrawal of fiat money (credit rubles) from circulation, achieved its goal of convertibility in 1897.

The stability brought about by the gold standard, the continued fiscal conservatism of budgetary authorities, export surpluses, and tax concessions granted to foreign businesses facilitated an influx of foreign capital into Russian industry, attracted principally by the higher rates of return in technologically backward Russian industry. Foreign investment was concentrated in metallurgy, chemicals, mining, and petroleum, and these industries adopted the modern capital-intensive techniques of the day, leading Lenin to refer to tsarist Russia as a "dual economy" of modern heavy industry and backward agriculture and artisan manufacturing.²⁰ By 1914, the Russian Empire was the world's largest net debtor.

This coordinated program to accelerate industrialization through a mix of government participation, guarantees, concessions, and the enticement of foreign capital was best exemplified during Sergei Witte's tenure as finance minister (1892-1903), although the foundation of the "Witte system" was laid by his predecessors. Witte's own policy statement, justifying his program to the tsar, documents the deliberate nature of the program.²¹ The description and assessment of the Witte system has occupied numerous scholars, and there is disagreement concerning how and how well it worked.²² There is agreement, however, that the Witte system had its costs: The peasant community was thought to be burdened by oppressive indirect taxes and land payments to guar-

antee revenue for government programs and to force agricultural exports, and the restrictive monetary policies required to attain convertibility are said to have led to losses of real output.²³ The main point is that the literature represents Russia as a case, similar to Japan, where the state embarked upon a deliberate and consistent program to accelerate industrialization and to reduce the technology gap between it and its advanced neighbors.

If this was the case, two relevant questions must be addressed: The first is whether the Russian experience did indeed differ significantly from those other countries undergoing modern economic growth? The second issue is the degree of success of the Russian model. Is there something either unique or unusual about the Russian industrialization experience that requires the special attention of the economic historian? Are there parallels between the tsarist industrialization era and the Soviet industrialization of the 1930s?

The study of Russian national income permits the researcher to come to grips with these issues. Although working at a high degree of aggregation, he can examine the general pattern of resource allocation during the era of attempted forced industrialization. Insofar as the stated objectives of state economic policy were to raise the investment rate (through depressed peasant consumption and enhanced foreign investment), to raise the foreign savings share of national income, and to promote (force?) agricultural exports,²⁴ the behavior of these variables can be observed in aggregate analysis, as can the government resources devoted to developing human and physical capital resources.

The major advantage of observing changes in resource allocation is that one is dealing with *actual* rather than *intended* outcomes. Much of the literature on tsarist economic history has been based, because of the absence of a firmer empirical footing, upon intended government action, such as that enunciated in Witte's noted policy statement. There is little doubt that the intent of state action was to depress peasant consumption, to raise the investment rate, and so on above rates that would have prevailed without such state action. The much more important issue is whether these intended actions were actually implemented to create end-use distributions of national income "different" from other European countries at a similar stage of development. This, in my opinion, is the more useful test of the Russian model.

Soviet economic historians, employing Marx's dialectical materialism, have sought to extract from the tsarist economic experience those features that culminated in the socialist revolution in Russia. The Marxist interpretation argues that the growing immiserization of the peasantry and the industrial worker, the "dual economy" growth of modern factory industry, the influx of foreign monopoly capital, and so on rendered Imperial Russia the "weak link" in the capitalist chain, ripe for a socialist revolution.²⁵ One objective of this study must be to evaluate this Soviet-Marxist literature in light of the quantitative history of tsarist Russia to establish whether the posited correlation between economic and revolutionary events exists.

In sum, there are two reasons for studying the real national income of tsarist Russia. The first is that it establishes a base line for assessing the economic performance of the Soviet economy during the plan era. The key issue, given the dominance of the growth objective throughout the Soviet era, is the extent to which the advent of centralized planning did succeed in accelerating economic growth. The second reason is that it allows the researcher to elaborate the tsarist model of economic development under conditions of relative backwardness. Moreover, the traditional Soviet historiographic interpretation of the Russian revolutionary process as caused by economic forces can be reexamined.

METHODOLOGY: SOME PRELIMINARY OBSERVATIONS

The bulk of this monograph is devoted to describing my estimates of the real national income of the Russian Empire for the period 1885 to 1913. Without detailed discussion of the calculations, the reader is in no position to assess their value. National income estimation has been called an art rather than a science, and after working on this project for a number of years, I am inclined to agree, at least in part. In some instances, crucial assumptions must be made, and it is these assumptions that are often swept under the rug out of sight of the unsuspecting user of the series. I believe it is the responsibility of the national income investigator to relate openly the important assumptions that underlie his calculations. This is necessary because analytical models used to supply components of various series may build specific relationships into the aggregate series that later users may cite as an important finding.²⁶

The raw material of national income calculations is never perfect, and the more remote the time period and the more underdeveloped the country, the less satisfactory is the underlying statistical material. National income calculations are conditioned by the stock of data produced by the country investigated. Data are gathered in an uncoordinated fashion by various governmental agencies with authority to compel responses. The stock of data collected reflects the political, cultural, and social institutions of the nation. In the Russian case, thanks to the fortuitous need to find public employment for the intelligentsia, the tsarist government's interest in tax collections, the official concern over agricultural exports and foreign capital, and the genuine social concern and public controversy over the agrarian question, the statistical data base is much better than is typically recognized, even by established authorities in the field.²⁷ It is, in fact, my contention that the national income series reported here is comparable to the historical series of most of the major industrialized countries, and in some instances it may even be superior.

For any national income series to be of value, it must be comparable conceptually to the series against which contrasts are desired. My overriding concern is to supply a series that is conceptually and practically consistent with Western recalculations of Soviet national income. As the recalculations were either prepared by Abram Bergson or patterned after his methodology, I have chosen to design my calculations after Bergson's *The Real National Income of Soviet Russia Since 1928*. Bergson himself patterned his calculations after the United States Department of Commerce methodology, and this is generally consistent with the methodology underlying the historical series of the major industrialized countries that I cite later in this book.

Although historical series usually estimate national income by aggregating sector-of-origin production series, I, like Bergson, emphasize the end-use methodology, that is, real national income is calculated as the sum of the end uses of national output: final household consumption, government final expenditures, and investment. The choice of the end-use method is based upon three considerations. First, the impact of planners' preferences upon Soviet resource allocation has been best revealed through shifts in end-use patterns, and it is therefore important to establish a similar frame of reference for the

tsarist period. Second, the impact of the Witte system upon tsarist resource allocation patterns is best discerned from the end-use data. Third and surprisingly, it is my view that the end-use series is more reliable than sector-of-origin aggregations in the Russian case.

A SURVEY OF ALTERNATIVE ESTIMATES

Soviet statistical authorities have yet to publish independent estimates of the real national income of tsarist Russia. Instead, they have been content to rely upon the estimates of an expatriate Russian scholar, S. N. Prokopovich, who did much of his research in Prague after leaving the Soviet Union.²⁸ Soviet publications also cite the earlier estimates of M. G. Mullhall,²⁹ but these are little more than casual guesses of Russian per capita income. The 1913 national income figure accepted by Soviet officialdom (Gosplan) for comparison with the plan era is basically that which Prokopovich prepared in 1918. I shall discuss in some detail the Prokopovich estimates later in this book.

The extant estimates of Russian national income are surveyed by the prominent Soviet statistician A. L. Vainshtein;³⁰ so the Russian-reading student is referred to his informative survey. The lack of independent Soviet estimates for the tsarist era is a puzzling feature of this field, insofar as much work, particularly that by S. G. Strumilin, G. A. Dikhtiar, P. A. Ol, and A. L. Vainshtein, has gone into the derivation of subcomponent series. For some unexplained reason, Soviet statistical authorities during the late 1920s locked themselves into accepting a modified version of the Prokopovich estimate. As far as I can establish, the issue has never been reopened.

Serious work on reevaluating tsarist national income has been undertaken by Western economists. M. E. Falkus has published a major revision of the original (and revised) Prokopovich sector-of-origin estimates, finding them to be substantially understated.³¹ I have prepared a 1913 estimate by end use that is supportive of Falkus's assessment of the Prokopovich figures.³² The most important work on Russian national income is the much-cited 1961 study by Raymond Goldsmith.³³ Goldsmith has estimated agricultural and factory industrial production for the entire post-emancipation era (1860-1913), which he expands into an aggregate output series by adding more casual estimates of handicraft production, livestock production, and services. Later in