

Mar 2016

No.283

**Foundations of the Soviet Command Economy,
1917 to 1941**

Mark Harrison

WORKING PAPER SERIES

Centre for Competitive Advantage in the Global Economy

Department of Economics

Foundations of the Soviet Command Economy, 1917 to 1941

Mark Harrison*

Centre on Competitive Advantage in the Global Economy, University of Warwick
Centre for Russian, European, and Eurasian Studies, University of Birmingham
Hoover Institution on War, Revolution, and Peace, Stanford University

Abstract

In a command economy, centralized political priorities take precedence over market equilibrium, and government purchases cannot be refused. This chapter describes the antecedents, origins, evolution, and outcomes of the Soviet command economy from the Bolshevik Revolution to World War II. The Soviet command economy was built in two phases, 1917 to 1920, and 1928 onward, with a 'breathing space' between. The present account gives prominence to features of a command economy that, while missing from the first phase, were developed during the breathing space, and then helped to ensure the relative success of the second phase. These were features that assured secrecy, security, and the selection of economic officials for competence and party loyalty. Like any economy in the international system, the command economy had a comparative advantage: the production of economic and military power.

Keywords: command economy, communism, corruption, economic growth, incentives, personnel, policy reform, power, secrecy, security, Soviet Union, violence, war economy

JEL Codes: H12, N44, P21.

Acknowledgements

This paper is a draft chapter for Silvio Pons and Stephen Smith (eds), *The Cambridge History of Communism*, vol. 1: *World Revolution and Socialism in One Country*, in preparation for publication by Cambridge University Press. I thank R. W. Davies, Andrei Markevich, and the editors for comments and advice.

* Mail: Department of Economics, University of Warwick, Coventry CV4 7AL, United Kingdom. Email: mark.harrison@warwick.ac.uk.

Foundations of the Soviet Command Economy, 1917 to 1941

The early years of the Soviet command economy provide a textbook case in the interplay of beliefs, interests, policies, institutions, and outcomes. Based on their beliefs, political actors decided what was in their interests and made policies that changed institutions (understood as Douglas North's 'rules of the game').¹ Institutions and policies together changed outcomes. Completing the loop, the actors interpreted the outcomes, drew lessons, and adjusted policies. We will start from what is most easily observed, the outcomes.

Outcomes

In 1913 the Russian Empire was the world's largest country in territory and the third largest in population (after China and India). Using dollars and international prices of the year 1990 as a standard of value, Figure 1 shows average incomes in 1913 just below \$1,500. It is often said that Russia was the poorest of the European powers, and this is true, but it also overstates Russia's backwardness. On a global yardstick, Russia was just an average country in everything but size. Russian incomes were close to the global average, similar to those of most Latin Americans and Japanese, and far above those of most Africans, Indians, and Chinese. Notably, the Russian average was well above the \$400 that the late Angus Maddison set as characteristic of a society at 'bare-bones' subsistence.²

In an unequal society many fell below the average, but Russia then was more equal than Russia today. In 1904, the incomes of Russia's bottom 40 percent were half the average; on that basis of that proportion, most of Russia's poor could still exist above the \$400 floor in a typical year.³ The poorest of the poor could sink below the floor. Not all years

¹ Douglas North, *Institutions, Institutional Change and Economic Performance* (Cambridge: Cambridge University Press, 1990), p. 3.

² Angus Maddison, *Growth and Interaction in the World Economy: The Roots of Modernity* (Washington DC: AEI Press, 2005), pp. 5-7. According to Maddison, average world incomes were \$1,524 in 1913 and \$1,958 in 1940, both years measured in the same international dollars and 1990 prices. Data from <http://www.ggdc.net/maddison/maddison-project/orihome.htm> (accessed 7 January 2016).

³ Peter H. Lindert and Steven Nafziger, 'Russian inequality on the eve of revolution', *Journal of Economic History* 74(3) (2014), 797.

were typical and from time immemorial Russia suffered from severe episodes of regional famine, the most recent in 1891. Thus, destitution tended to be periodic and local. On average, life expectancy was short—around 30 years for a Russian born in 1897.⁴ High levels of infant and child mortality were an important factor in poor average prospects.

At the end of our period, on the eve of World War II, not everything had changed. Soviet borders were quite similar to those of the Russian Empire. Between 1917 and 1940 there were great exchanges of territory, most of which were subsequently reversed. In the outcome, the Soviet population was still the world's third largest.

In the economy, there was growth. In 1940, output per head was 50 percent above the 1913 level. This improved on the performance of the global mean, which went up by just one third.

There was growth, but growth was volatile. Figure 1 shows, for example, that four fifths of the increase in national income from the beginning to the end of our period was achieved in a single explosive spurt that lasted just four years (1934 to 1937).

In 1940 the Soviet Union's national product was not just larger than before. There was a great movement from farms to factories and offices. In 1913 agriculture and trade, shown in Figure 2, accounted for three fifths of the Russian economy. By 1940 their share had shrunk to one quarter. Industry, transport, and services went up from one quarter to three fifths. Most of this shift was compressed into the period of the first five-year plan, from 1928 to 1932.

Output expanded, but consumption barely increased. Household consumption made up four-fifths of national expenditure in 1913; by 1940 it had fallen to barely more than one half. Figure 3 shows the change in uses of resources. Consumption gave up resources to government outlays, civilian and military, and to investment in the capital stock, most of it now state-owned or controlled. Again, most of the change in uses of national income was squeezed into a relatively short time-span, which the figure shows as 1928 to 1937. Observations of higher frequency might show that the main changes were even more compressed.

The changes in the structure of the Soviet economy were far-reaching and abrupt. Their size and speed have no parallels in the economic history of market economies in peacetime, where structural change has generally proceeded at a much more leisurely pace. A comparison among Figures 1 to 3 suggests, however, that when structural change was most rapid, in the early 1930s, there was little economic growth.

⁴ *Naselenie Rossii za 100 let (1897-1997). Statisticheskii sbornik.* Moscow: Goskomstat Rossii, 1998), p. 164.

It is not easy to compare the inequalities of welfare across the Soviet population of 1940 with those in the Russian Empire of 1913. In Russia's market economy, access to goods and services depended largely on purchasing power, which can be measured. In the Soviet economy entitlement was based much more on political, social, and employment status. At the same time distribution by status became secret. Most entitled were the party elites in Moscow and the provinces who could draw freely on public resources for their household needs. Stalin lived modestly, but he never had to stand in line. Public employees in large factories and government offices received many benefits, including access to goods at low government prices and free housing, childcare, medical care, and other services. The security police regularly sampled their attitudes and reported them to Stalin personally, who responded to evidence of discontent by directing the shipment of additional supplies.⁵

The entitlements of collective farmers, in contrast, were few. They were required to work much of the year for the collective for little or nothing, and were expected to feed themselves from restricted family land allotments. No one responded to their discontents. In times of hunger they died when others went without. The Soviet Union suffered two more famines within our period, one in 1921 and another in 1932 to 1934. By the numbers of premature deaths, both were worse than the famine of 1891.⁶

Least entitled were the millions swept up into labour camps and penal colonies because they violated Soviet laws on state property or work discipline, or because they fell into the social and ethnic categories that Stalin designated from time to time as more likely to contain enemies. These were executed or imprisoned for varying terms; if imprisoned, they were worked as slaves, sometimes to death.

For those that survived, conditions of life generally improved. The 1930s saw determined efforts to educate the public in health and disease prevention and to provide a basic infrastructure for public health. By 1940, adult heights were increasing and life expectancy at birth was more than 40 years.⁷

⁵ Paul R. Gregory, *The Political Economy of Stalinism: Evidence from the Soviet Secret Archives* (Cambridge: Cambridge University Press, 2004), pp. 92-97.

⁶ R. W. Davies and S. G. Wheatcroft, *The Years of Hunger: Soviet Agriculture, 1931-1933* (Basingstoke: Palgrave, 2004), pp. 402-415.

⁷ Robert C. Allen, *Farm to Factory: a Reinterpretation of the Soviet Industrial Revolution* (Princeton: Princeton University Press, 2003), 1332-152; Elizabeth Brainerd, 'Reassessing the standard of living in the Soviet

Behind the outcomes of 1940 were the policies and institutions of the Soviet command economy. State property and centralized distribution squeezed private ownership and trade into the background and the underground. The new institutions arose from discretionary political actions on a vast scale. Discretionary interventions are often short-lived; to persist, they must be institutionalized in new rules of the game. The Soviet command economy that existed on the eve of World War II institutionalized the political interventions of the preceding years.

As discussed in the bibliographic essay that ends this chapter, economists and economic historians have often evaluated the Soviet economy from the perspective of civilian economic growth and consumer welfare. But this is not how Lenin and Stalin typically expressed their ambitions for the economy. They saw Russia surrounded and penetrated by internal and external enemies working together against the Revolution. The goal they set was to rebuff these enemies by ‘overtaking and outstripping the advanced countries’ in aggregate production and military power, which counted for much more than individual well-being.⁸

Table 1 illustrates the progress made from the perspective of national power. The table uses the composite index of national capability (CINC), developed by the Correlates of War project to capture ‘the ability of a nation to exercise and resist influence’. At each point in time, the CINC score combines six indicators of a country’s relative weight in the international system: total population, urban population, iron and steel production, energy consumption, military personnel, and military expenditure. On this measure the table reports the ‘top ten’ powers in 1913 and 1940.

In both years global power was highly skewed, so that the top ten countries gathered nearly 90 percent of global power. From start to finish, there was little change in the top ten. The Austro-Hungarian and Ottoman (Turkish) Empires dropped out after World War I, and their places were taken by two lightweights, Spain and Canada. Stalin’s policies did not improve the global rank of Russia (the Soviet Union), placed third after the United States and Germany and before the United Kingdom in both 1913 and 1940. What did change was relative distance. The Soviet Union and Germany both gained on the United States, the world leader, and both

Union: an analysis using archival and anthropometric data’, *Journal of Economic History* 70(1) (2010), 83-117.

⁸ V. I. Lenin (in 1917), *Pol’noe sobranie sochineniia* (hereafter *PSS*), vol. 34 (Moscow: Politizdat 1969), p. 198, echoed by I. V. Stalin (in 1927), *Sochineniia*, vol. 10 (Moscow: OGIZ, 1949), p. 302.

opened their lead over the UK. In fact, the Soviet Union registered the second largest gain (after Germany) in relative strength.

In light of the war that followed, this achievement would later be widely hailed as a justification of Stalin's efforts to build industrial and military power in relative isolation from the world economy.

Antecedents and definitions

At the turn of the twentieth century, the concept of a command economy was unknown in the English language. Of the semantic equivalents in use today, 'central planning' was the first to appear, coming into usage in 1916.⁹ This was the year of Germany's experiment in economic planning for the Hindenburg programme of war-industry construction.

World War I was the first conflict in which industrialized powers fought each other to a standstill, and it was the first in which government-controlled economic mobilization was decisive. The overriding need to assure the supply of war gave rise to common features of a command economy in several countries, more notably in Britain and Germany, less so in Russia, before the Bolshevik Revolution took place. The economic demands of the war were unprecedented: by 1917, government purchases stood at nearly 40 percent of GDP in Britain, 50 percent in France, and 60 percent in Germany.¹⁰ But these governments did more than just purchase a large share of the economy's output. In addition, they intervened on the supply side so as to turn their offers to buy into offers that could not be refused, the definition of a command.

The complex nature of a modern economy implied that such efforts could not be limited to the market for final goods and services, and controls were gradually extended back along the supply chain to the markets where intermediate products and raw materials, food, labour, capital issues and bank credit, transport and shipping space, and foreign exchange were traded. In all those markets a common-sense or 'business-

⁹ Based on their frequency in the Google Books English-language corpus, inspected through the Google Books N-gram Viewer, found at <https://books.google.com/ngrams/>, and described by Jean-Baptiste Michel, Yuan Kui Shen, Aviva Presser Aiden, Adrian Veres, Matthew K. Gray, The Google Books Team, Joseph P. Pickett, Dale Hoiberg, Dan Clancy, Peter Norvig, Jon Orwant, Steven Pinker, Martin A. Nowak, and Erez Lieberman Aiden, 'Quantitative analysis of culture using millions of digitized books', *Science* 331, no. 6014 (2011), 176–182. 'Command economy' does not appear in the Google Books corpus until the 1960s.

¹⁰ Stephen Broadberry and Mark Harrison, 'The economics of World War I: an overview', in Broadberry and Harrison (eds), *The economics of World War I* (Cambridge: Cambridge University Press, 2005), p. 15.

like' approach implied the fixing of quantities while holding prices below the level that would clear the market, replacing the tendency to equilibrium with administrative rationing based on political priorities.

The main driver of a command economy was the government's aim to monopolize the economy's resources and punish their diversion to private goals. Government demands were unprecedented, but they did not make a command economy if private suppliers could turn the government down or negotiate a higher price. Government offers to buy from private firms became more forceful when the government built and subsidized its own shipyards and arsenals, or denied materials and labour to uncooperative firms. The pressure on those firms to comply was reinforced when government-sponsored cartels established priorities that favoured the firms supplying the government by channelling scarce intermediate goods in their direction. As for farmers, government officials intervened in the private selling of food by fixing maximum prices and minimum entitlements for the urban population. In the labour market, the government drafted able-bodied men for military service and also, increasingly, for war work in factories and mines. In monetary policy and in markets for domestic credit and foreign exchange, there was financial repression: favourable terms for approved borrowers regardless of ability to repay, with others denied credit.

Taken together, these elements, which all seemed to arise naturally in a context of patriotic fervour, promised to give government officials colossal authority to steer resources away from private uses. To realize the authority was not straightforward, however. It placed great demands on the state's capacity to implement new policies and enforce new rules without succumbing to corruption or resorting to violence.

Imperial Russia in the war

How much of this command system already existed in Russia before 1917, when the Bolsheviks took power? The answer is: only a little.

The Bolsheviks inherited an economy in decline. By 1917, Russia's real national income was down by around one fifth from its peacetime level.¹¹ This sounds bad, and in fact it was bad: the Russian economy was being slowly pulled apart by the demands of total war.

On the demand side, Russia's nine million soldiers required to be fed, armed, and deployed. But Russia's economy was far flung and its productivity lagged behind that of its rivals. In wartime most of the

¹¹ Andrei Markevich and Mark Harrison, 'Great War, Civil War, and recovery: Russia's national income, 1913 to 1928', *Journal of Economic History* 71(3) (2011), 680.

working population was employed in farming or fighting. Fighting took resources directly from farming; food supplies were undermined by the largescale conscription of young men and horses into military service. Domestic taxes could not meet the war's demands, so the Imperial government covered the deficit by borrowing extensively. Britain and France supplied funds; so did Russia's central bank, which printed money to match. This boosted the war effort for a time, but inflation then took off, reaching 6 percent monthly in 1916 and early 1917.¹²

As for Russia's industries, in wartime they struggled to satisfy war contracts. They did not have the capacity to continue to supply the farming population with manufactured consumer goods and agricultural implements as well, and this damaged the farmers' incentives to supply food to the war effort. The damage was accentuated by the defeats of 1915, which led to the loss of much farmland, while millions were displaced and fled to the east, creating an additional burden of refugees. Food became scarce, particularly in the towns. At this point the economy began to disintegrate.¹³

The decline in the Russian economy during the war years up to 1917 sounds bad, but it is possible to make too much of it. The problems that Russia encountered in mobilizing for total war were not unique and were apparent in all the European powers that retained a significant sector of peasant farmers. In fact, the margin of economic decline was smaller in Russia than in Austria, Finland, France, Germany, Hungary, and Turkey.¹⁴ In other words, while the military situation that the Bolsheviks inherited was absolutely dire, and was made worse by their own agitation among the soldiers, the economic situation was no worse than that found elsewhere on the continent.

At the end of the monarchy, Russia still had a market economy. The main factor directing the war mobilization of resources was the money that the Imperial government threw at the war. As noted, this alone did not make a command economy. It is true that the war also gave rise to a few innovative policies and institutions that can be read with hindsight as the antecedents of a command economy in Russia before the Bolsheviks

¹² Mark Harrison and Andrei Markevich, 'Russia's home front, 1914-1922: the economy, in Adele Lindenmeyr, Christopher Read, and Peter Waldron (eds), *Russia's Home Front in War and Revolution, 1914-1922*, vol. 3 (Bloomington: Slavica, forthcoming in 2016).

¹³ Peter Gatrell, *Russia's First World War: An Economic and Social History* (Harlow: Pearson Longman, 2005).

¹⁴ Markevich and Harrison, 'Great War, Civil War,' 690; for country studies see Broadberry and Harrison (eds), *Economics of World War I*.

took power. At the time, however, these steps were tentative, with little political will or administrative capacity behind them, so that outcomes were hardly affected.

Most significant were the Imperial government's efforts to prioritize food for the soldiers and workers. Bread was rationed in Petrograd and Moscow from 1916, but rations were not honoured unless bread was available, which made the exercise meaningless. The availability of bread was compromised by the low fixed prices that the government wished to prevail. The government set quotas of grain to be supplied from every region at the low fixed prices, but at those prices the peasants in those regions would not sell to anyone. The quotas were voluntary at first, but became statutory in November 1916. In March 1917 the Provisional government declared a state monopoly of grain. When the farmers resisted, so that supplies fell short or were diverted into illegal channels where prices rose freely, the government did not enforce the quotas, the fixed prices, or the monopoly. 'Until the October Revolution', according to Silvana Malle, 'market rules virtually prevailed'.¹⁵

First steps

Following the October 1917 Revolution, the Bolsheviks quickly established three elements of a command system: the principle of unconditional confiscation of private property, the control of industrial supply, and the control of food produce that was judged to be surplus to the farmers' own basic consumption. In sharp contrast to the Imperial and Provisional government, the Bolsheviks were willing to use considerable violence to impose their principles.

Confiscation served several purposes, including the expropriation of enemies, the gain to the public purse, and the reward of supporters. Early Soviet decrees transferred the estates of the aristocracy and church to the state, but most of this property was immediately privatized when the peasants took what they wanted. The Bolsheviks raided the banking system in search of real and paper valuables. Some of this accrued to the state, but again much was taken by the raiders for themselves.¹⁶ The value of such items under new ownership was greatly diminished, as is generally the case for stolen goods.

¹⁵ Silvana Malle, *The Economic Organization of War Communism, 1918-1921* (Cambridge: Cambridge University Press, 1985), 324.

¹⁶ Sean McMeekin, *History's Greatest Heist: The Looting of Russia by the Bolsheviks* (New Haven: Yale University Press, 2009); Elena Osokina, *Zoloto dlia industrializatsiia: Torgsin* (Moscow: ROSSPEN, 2009).

In industry there was a wave of nationalizations. Within a month of the Revolution, a government decree established a ministry of industry, the Supreme Council of the National Economy (Vesenkha). The ministry quickly bred a number of specialized 'chief committees' responsible for the supply of materials such as coal and iron, and a territorial apparatus charged with implementation of orders.¹⁷ At first the Bolshevik administration aimed only to regulate private industry, as in the German war economy of the time. Nationalization of industry proceeded faster than intended. In some cases the private owners or managers fled; in other cases, gangs of workers chased the owners away. The workers declared the facilities to be public property, and introduced management by elected committees.¹⁸ Determining that elective management was ineffective, Vesenkha declared itself the legal owner and took responsibility.

The establishment of Vesenkha was followed by measures to nationalize the banks (January 1918), to affirm state monopolies over domestic trade in foodstuffs and all foreign trade (April), and to seize the 'commanding heights' of large scale industry and transport (June).

The extension of state ownership and regulation had implications for food policy. Within weeks, the new state became responsible for feeding millions of soldiers and urban residents, many of them its employees. The Bolsheviks took over the already existing grain quotas and price controls that, until now, had had little or no effects on the actual distribution of food. Failure to feed the workers and soldiers had already brought down the Russian monarchy and the Provisional government. Not wishing such events to be repeated, between January and June 1918 the Bolsheviks instituted a 'food dictatorship' based on requisitioning food stocks and their centralization under government control.¹⁹

These elements of a command economy were in place by the early summer of 1918. The attempts to coordinate industry and to ration food resembled measures already adopted in Germany, where Lenin and other Bolsheviks now saw a template of economic as well as military

¹⁷ Eugène Zaleski, *Planning for Economic Growth in the Soviet Union, 1918-1932* (Chapel Hill, NC: University of North Carolina Press), pp. 24-36.

¹⁸ E. H. Carr, *The Bolshevik Revolution, 1917-1923*, vol. 2 (London: Macmillan, 1952), 62-79.

¹⁹ Lars T. Lih, *Bread and Authority in Russia, 1914-1921* (Berkeley: University of California Press, 1990), pp. 126-137.

modernization.²⁰ They went much further, however, in their radical disregard for property rights and civil rights. Resisters faced unrestrained violence, an element new to Russia and the other European economies at war. In matters of food supply Lenin motivated extreme penalties by reference to ‘enemies of the people’ in agriculture and trade, working hand in glove with the foreign enemy to strangle the revolution.²¹

Context and results

In the confused circumstances of the time, because the result looked like a war economy, it was always tempting to suppose that it was driven by the immediate demands of war, like the war economies of the industrialized powers. This interpretation was offered by Lenin himself when, after the event, he denounced ‘that peculiar war communism, forced on us by extreme want, ruin and war’.²² He meant to suggest that the command economy was not a free choice but a necessary wartime evil.

This story is refuted by timing, however. At the end of 1917, Russia’s economy was in no worse shape than that of any other continental power, where no such measures were taken or contemplated. By March 1918, Soviet Russia had made peace with Germany and the Bolsheviks did not anticipate rebellion in Russia. A revolt of Czechoslovak troops in Siberia at the end of May turned out to be the signal, but even so the Civil War was slow to unfold, and there was little serious fighting through the rest of the year.²³ As late as October, Lenin was planning a Red Army of 3 million men for the next spring to support the German revolution—not to suppress counterrevolution in Russia.²⁴ Thus the context of the first attempt to establish a Soviet command economy was not a domestic

²⁰ Lenin, *PSS*, vol. 36 (Moscow: Politizdat, 1974), p. 132; see also Malle, *Economic Organization*, pp. 298-300.

²¹ Summary execution: Lenin, *PSS*, vol. 35 (Moscow: Politizdat, 1974), pp. 311, 312, 314, and 358; ‘enemies of the people’: vol. 36, p. 506.

²² Lenin, *PSS*, vol. 43 (Moscow: Politizdat, 1970), p. 220.

²³ While the Civil War is conventionally dated from the end of May or June 1918, its low intensity in the remainder of the year can be judged from the fact that the Red Army incurred only 8,000 permanent losses in 1918 compared with 368,000 in 1919 and 1920, based on an incomplete count reported by G. F., Krivosheev et al., *Grif sekretnosti sniat: Poteri Vooruzhennykh Sil SSSR v voinakh, boevykh deistviakh i voennyykh konfliktakh: Statisticheskoe issledovanie* (Moscow: Voenizdat, 1993), pp. 30-31.

²⁴ Lenin, *PSS*, vol. 50 (Moscow: Politizdat, 1970), p. 186.

emergency but rather the mistaken belief that foreign and domestic threats had receded, leaving the emergency in the past.²⁵

It is true that, once the Civil War was in full swing, the scope of the command economy was further enlarged. By 1920, public ownership of industry extended to small artisan establishments with one or two workers.²⁶ The government had first call on the labour services of the citizens through military levies, requirements to perform public works, and the control of public employment, where workers were under a military style of discipline.²⁷ Tougher regulation was in preparation.²⁸ Agriculture remained in private hands, but farmers were obligated to deliver up their food produce above a subsistence norm for government distribution to others. The government was preparing to impose sowing plans on individual farms. Trade was now a government monopoly: the government had the right to buy all important commodities at fixed prices. These were orders that could not be refused, either because the seller was also a government employee, or because the buyer could shoot the seller. In industry, government priorities over intermediate goods were enforced by a centralized authority, *Vesenkha*, which managed the government-owned production facilities and drove out private enterprises. Soldiers and urban residents depended on a government ration for their food requirements.

Some elements of the command economy were still missing, however. Rations fell short, so that the black market flourished. Inflation accelerated. The Bolshevik government was even less able to raise taxes to cover its spending than the governments that came before it, and there was no attempt at financial repression.

Also missing was competent, clean administration. If the Bolsheviks had the will to make the command economy work, they lacked the state capacity. Direct evidence of this is the violence and corruption that surrounded their relationship with peasant farmers. The new regime had so little competence and legitimacy that it could impose its requirements only by subjecting resisters to exemplary punishment. In order to motivate the violence, it gave a substantial share of the food obtained to the perpetrators as incentives.

²⁵ Christopher Read, 'Leninism, Stalinism and the Problem of Transition: Spring 1918 and "The Immediate Tasks of the Soviet Government"', Working Paper (University of Warwick, 2012).

²⁶ Malle, *Economic Organization*, p. 65.

²⁷ Zaleski, *Planning for Economic Growth*, p. 19.

²⁸; Malle, *Economic Organization*, pp. 485-488.

Under these conditions the command economy did not work. The state struggled to monopolize resources. As fast as it gathered them into its hands, the same resources flowed back into private uses like sand through a sieve. Officials, managers, workers, and farmers diverted them to eat or barter or resell. You could call it corruption or a loot chain, but often it was just people who were cold and hungry, fighting over scraps to help their families survive.

When the loot chain was able to function, at least someone got a benefit. Even worse was the alternative, when the resources that the government aimed to capture vanished into thin air, so that no one gained. This happened when the supplier lost any interest in producing goods that would otherwise be seized or stolen. It happened, clearly, in agriculture, where peasant farmers, forced to sell below cost, unable to buy anything in exchange through legal channels, responded by further cutting back the area under crops, so that even less food was produced than before.

Confirmation of this mechanism is found in the trend of the aggregate economy under the new command system. After the October 1917 Revolution, but before the Civil War battles that began with 1919, the Russian economy fell over a cliff. Russia's national output, which declined by one fifth in three years of the World War, dropped by two fifths in 1918 alone, and continued to drop further. Large scale industry, transport, and construction, the sectors of the economy that were most engaged with the supply of war, disappeared, returning the economy to a pre-modern structure. Incomes fell to a pre-modern level too, less than \$600, equivalent to that found in the poorest economies in the world today, leaving many at or below Maddison's 'bare bones' subsistence.²⁹

The command economy, and not the wars to which it supposedly responded, caused Russia's 'worst economic disaster of the twentieth century'.³⁰ Just as output collapsed before the serious fighting began, it also failed to recover when the fighting went away. By the end of 1920 the anti-Bolshevik forces were essentially defeated but the economy stagnated at a dangerously low level.³¹ Pockets of hunger and disease

²⁹ Markevich and Harrison, 'Great War, Civil War,' 680.

³⁰ Markevich and Harrison, 'Great War, Civil War,' 698.

³¹ Fighting continued after 1920, but only on the periphery and at much lower casualty rates for the Red Army: 238,000 permanent losses in 1921 and 1922, compared with 702,000 from 1918 to 1920 (almost all in 1919-1920), based on relatively complete data reported by Krivosheev et al., *Grif sekretnosti*, p. 54.

appeared and then spread uncontrollably. In 1921 harvests failed across the southern and eastern regions. More than five million people died.³²

A breathing space

At the Tenth Party Congress of March 1921, Lenin announced a 'breathing space'.³³ The requisitioning of food surpluses from farmers would cease. Instead, a graduated tax would be levied in proportion to the harvest. The food obtained through taxation would fall short of what was needed to feed the towns and the army, so the remainder would be acquired through market exchange. By means of this 'new economic policy', the Bolsheviks aimed to restore incentives to agriculture and to replace the conflict-laden struggle with the peasant farmers over food supplies with trade based on mutual benefit.

The elimination of one element of the command system had implications for other elements. These implications emerged only gradually. Meanwhile, two factors slowed down the process of policy reform. The harvest failed, precipitating widespread famine. Agricultural recovery began in 1922. And policy reform was not immediately extended to public finance. Government spending was maintained, revenues fell even shorter than before, and the expectation of ever-widening budget deficits precipitated a hyperinflation. Stabilization was achieved only in 1923.

By the mid-1920s, however, the Soviet economy had achieved a substantial recovery. It now looked quite different from the years of 'war communism'. Food distribution was no longer a public monopoly, and small private traders were thriving. Industry produced consumer goods for sale to urban working households and to farmers in the countryside. Public-sector workers were demobilized, and private enterprise was allowed back into small-scale production. For most people, in other words, economic life became almost normal, even if the politics of the new regime remained somewhat strange.

Off the streets and behind closed doors, important elements of the command economy remained in place. Large-scale industry, transport, and banking were still in state ownership. The business of industry was delegated to managers, but the business of management remained highly political. It is not that profit-seeking was unimportant; in every branch of

³² S. G. Wheatcroft and R. W. Davies, 'Population', in R. W. Davies, Mark Harrison, and S. G. Wheatcroft (eds), *The Economic Transformation of the Soviet Union, 1913-1945* (Cambridge: Cambridge University Press, 1994), p. 63.

³³ Lenin, *PSS*, vol. 43, p. 69.

industry, managers were now pressed to cover costs and raise productivity faster than wages. The Soviet government's peacetime priority was to secure its regime by building military and industrial power. This required funding for industrial projects and re-equipment, and food for growing numbers of industrial and construction workers and soldiers. The government aimed to fund investment by increasing industrial profits, and to feed the workers and the army by getting more food from the countryside. Lower prices of manufactured goods would encourage farmers to sell more food voluntarily, but the same lower prices implied lower profits from industry unless industrial costs could be pushed down by even more. The most important influences on industrial costs were wages and work effort, so managers faced relentless pressure to force employees' efforts while restraining wages.

But the pressure that managers faced did not come from the market; it came from the ruling party and its 'regime of economy'.³⁴ Managers did not face pressure from buyers, because high and rising public investment created excess demand and a sellers' market. They were not under pressure from competitors, because entry into the domestic market was regulated to protect them. They were not pressed by creditors, because government subsidies would cover any losses. The pressure came from policy. If the basic rule of a command economy is that policy takes precedence over market equilibrium, then that rule never went away.

Under the New Economic Policy the pressure on the markets for food and labour was considerably relaxed. At the same time the Bolsheviks made major investments in three aspects of state capacity. First was a special agency to coordinate targets for the economy's final products with supplies of intermediate goods: the state planning commission (Gosplan), which Lenin authorized just two months before announcing the New Economic Policy. Gosplan found precedents in Lenin's utopian electrification plan of 1918, and in the experience of coordinating industry during the Civil War years. Although Gosplan would be famous for its long-term projections, most of its early activity consisted of trying to solve detailed matching problems of inter-industry supply.³⁵ A result

³⁴ E. H. Carr and R. W. Davies, *Foundations of a Planned Economy, 1926-1929*, vol. 1 (London: MacMillan, 1969) pp. 357-375.

³⁵ Zaleski, *Planning for Economic Growth*, 40-41.

was the famous ‘material balances’ methodology for balancing supply and demand for goods on paper.³⁶

The regime made a second investment in the supply of competent, non-corrupt officials. The key figure here was Stalin, general party secretary from 1922. The system that he created reserved all important positions in the government and the economy for party members and made their careers. Centralized personnel files identified the competences, records of achievement, and failings of the thousands available. Government appointments promoted and rewarded the competent and loyal party members and planted them everywhere. To Stalin, his biographer Steven Kotkin notes, competence and loyalty were the same thing, because the measure of competence was clear understanding, unswerving acceptance, and detailed implementation of party policies.³⁷

In a third investment, Stalin’s secretariat also codified the Soviet regime of secrecy.³⁸ A command economy is protected by secrecy. If the public has the facts and knows who makes the decisions, every command can be appealed and bargained. It is true that any government likes to keep secrets, not only in military and intelligence affairs. Every politician and business executive values confidentiality. But Soviet secrecy was unusually pervasive and outstandingly effective. The extension of state ownership turned a vast swathe of normally confidential business facts into government secrets. The ‘conspirative norms’ that Bolshevik decision making took from the underground and applied directly to government completely excluded modern concepts of ‘freedom of information’ and ‘right to know’. And government secrecy, being identified with state security, was managed by the security police.

The system of secrecy put economic decisions beyond public challenge. It complemented Stalin’s personnel system because the way a person handled secret communications became a measure of competence and loyalty. Finally, the need to screen managers for access to secret communications embedded the security police in the market for qualified personnel.

³⁶ R. W. Davies and S. G. Wheatcroft, eds. *Materials for a Balance of the National Economy, 1928-1930* (Cambridge: Cambridge University Press, 1985).

³⁷ Stephen Kotkin, *Stalin*, vol. 1 (Penguin: London, 2014), chapter 10.

³⁸ G. A. Kurenkov, *Ot konspiratsiia k sekretnosti: Zashchita partiino-gosudarstvennoi tainy v RKP(b)-VKP(b) 1918-1941 gg.* (Moscow: AIRO-XXI, 2015).

The personnel and secrecy regimes that Stalin established in the 1920s had implications far beyond the economy. They became the bedrock of the Soviet political monopoly and, while he lived, of Stalin's personal authority. But they do also have an economic aspect that has been little noted. The lack of a personnel system in the first years of the Bolshevik dictatorship was surely a factor in the disastrous end of Lenin's attempt at a command economy. His creation of a personnel system in the 1920s helps to explain how Stalin succeeded when he tried a command economy again. Throughout its existence the Soviet command economy was plagued by its low information capacity, and this can be traced to the secrecy regime that underpinned it from the 1920s.

Four crises

During 1928 Stalin, now the central figure in the Bolshevik regime, abandoned the New Economic Policy and launched a second attempt at a command economy. Like the first attempt, the second one was violent and destructive, but with a different outcome: once it began there was no breathing space, and after several years a new economic system was in place.

The return to a command economy marked the resolution of four crises: the leadership struggle, a crisis over grain supplies, a war scare, and a crisis over the loyalty of key industrial personnel. The leadership struggle that followed Lenin's last illness was resolved in Stalin's favour. In December 1927 Stalin sealed the victory over his opponents on the Left of the party, and turned to settle his account with former allies, now critics, on the Right. Around him emerged a close-knit clique that it is convenient to call 'Team Stalin'.³⁹ The team included Vyacheslav Molotov (prime minister), Klim Voroshilov (defence), Sergo Ordzhonikidze (industry), Lazar Kaganovich (railways), Anastas Mikoian (trade), and Valerian Kuibyshev (planning).

The grain crisis followed from the economic tensions already described. Administrative pressure failed to lower costs and raise productivity in industry by enough to pay for increasingly ambitious industrialization plans. As much as the regime tried to hold down the prices of industrial goods, there was little incentive for the peasants to sell food to the state's purchasing agents. The reason was the industrialization plans already mentioned: after industry had supplied the goods required for investment, there was not enough capacity to produce the goods that

³⁹ S. G. Wheatcroft, 'From Team Stalin to degenerate tyranny', in E. A. Rees (ed.), *The Nature of Stalin's Dictatorship: The Politburo, 1924-1953* (Basingstoke: Palgrave, 2004), pp. 79-107,

would satisfy peasant demands. During 1927 the regime began take back control of the food market, arresting traders and putting them on trial. With 1928, Stalin and other leaders fanned out to the Urals and Siberia to boost food supplies by requisitioning. The return to compulsion brought trials of resisters, linked to accusations of sabotage and betrayal to the foreign enemy. In June 1929 the state reasserted its legal monopoly over the grain trade.

The industrialization plans, and a solution to the grain crisis, were rendered more urgent by external tensions, but the mechanism at work was not the obvious one. The 1920s saw periodic war scares, most notably in 1927. These were mostly just scares, not real threats. For the Bolsheviks the foreign enemy was an article of faith, not a testable hypothesis, so they did not need war scares in order to believe in the likelihood of war.

The war scares mattered otherwise. They served to flash urgent warnings to Stalin and those around him about the mood in the country. The channel for the warnings was security police reports that signalled sharp upticks in mass discontent whenever rumours of war circulated.⁴⁰ The Bolshevik leaders did not forget the last war, when hunger at home and military setbacks abroad had sparked a revolution. They determined to insure themselves against any repetition. Here the war scares were useful. Political leaders used them to stigmatize critics as traitors. And military leaders used them to develop war plans with more ambitious requirements for industrial mobilization.

The heightened awareness of risks to the security of the regime thus had implications for both foreign and domestic policy. International capital, Stalin maintained, having failed to overthrow the regime by invasion, was now trying to overthrow it by stealth, by sabotaging its economic plans. 'We have internal enemies. We have external enemies,' he declared in the spring of 1929. 'This must not be forgotten, comrades, for a single moment'.⁴¹ The answer to foreign enemies was to rearm, but this would take years. An interim solution was to identify the enemies within and eliminate them.⁴²

⁴⁰ N.S. Simonov, "'Strengthen the defence of the land of Soviets": the 1927 "war alarm" and its consequences', *Europe-Asia Studies* 48(8) (1996), pp. 1355-1364.

⁴¹ Stalin, *Sochineniia*, vol. 11 (Moscow: OGIZ), p. 62.

⁴² Mark Harrison, 'The dictator and defense', in Harrison (ed.), *Guns and Rubles: the Defense Industry in the Stalinist State* (New Haven: Yale University Press, 2008), pp. 1-30.

April 1928 saw the first show trial of alleged saboteurs, who were managers and engineers, many of them foreign, from the mining town of Shakhty in the North Caucasus. Several were executed.⁴³ There was collateral damage. The Soviet Union's foreign relations were damaged. At home industrial relations were poisoned because managers and engineers in every workplace fell under suspicion and lost authority. Stalin paid the price to deliver an unmistakable message: any resistance to regime plans aligned resisters with the foreign enemy, placing them outside the community.

The plan is the law

Stalin's command economy emerged in the 1930s through several key processes: the centralized planning of industry and services, the collectivization of agriculture, the detachment of the economy from foreign trade, the spread of forced labour, the embedding of the security police in the economy, and rearmament.

Most famous of Stalin's plans was the 'first five-year plan for national economic development', compiled by Gosplan and approved at a party conference in April 1929.⁴⁴ The five-year plans can be seen from many angles. From the side of final outputs, there was a set of ambitious targets: the first five-year plan envisaged doubling national income and trebling the output of investment goods, while lifting consumption per head by two-thirds. From the side of capacity, there was a utopian vision of the future, captured by hundreds of large-scale industrial and infrastructural projects. From the side of intermediate requirements, the plan was built on a framework of optimistic assumptions for productivity, harvests, foreign trade, and international relations. On all matters, successive five-year plans gave less and less detail as the economy was ruled more and more by secrecy. But the point was not in the detail because from yet another side the five-year plan was not a technical blueprint; it was an instrument to mobilize the masses against enemies.

From this time Stalin used periods of heightened political and economic mobilization to identify and isolate the persons he could not trust. It was not a metaphor when, in 1931, he called on the party to 'thrash' the 'so-called wise men, who talk to you about realistic plans and so on'.⁴⁵ Political leaders, economic officials, and ordinary citizens were

⁴³ Kotkin, *Stalin*, vol. 1, chapter 14.

⁴⁴ Zaleski, *Planning for Economic Growth*, pp. 58-147.

⁴⁵ R. W. Davies, *The Soviet Economy in Turmoil, 1929-1930* (Basingstoke: Macmillan, 2004), p. 75.

exposed to arrest and punishment when they cast doubt on ambitious targets or failed to struggle towards them.

While five-year plans were never unimportant, they were invariably pushed off course by unforeseen circumstances and unintended consequences. The economy was managed from day to day by officials in the industrial ministries and the bargains they made. As industry grew and became more complex, *Vesenkha* was divided into many specialized ministries. Serious disruption was managed above the ministers by Team Stalin, which sometimes pushed back with still more radical measures, and sometimes adapted to what could not be changed.

Radical pushback was expressed in decisions of 1928 to take grain by force when it did not come from the market, of 1930 to mobilize for 'the five-year plan in four years', and of 1932 to press for the grain quotas when the harvest failed. At other times there was adaptation. Associated with the five-year plan was a utopian vision of a moneyless economy with physical products rationed to industry and consumers alike, based on collective management, rigid obedience, and heroic self-sacrifice. After 1931 this vision retreated in stages. By the mid-1930s Soviet industry had individually responsible managers and profit-and-loss accounts. Employees were paid in money based on results. Money could be spent in government stores where prices were low and shelves were often bare, or at higher scarcity prices in a restricted sphere of private trade.⁴⁶

But adaptation was limited. The limits are shown by the first attempt to reform the command economy, which transpired as early as 1931.⁴⁷ On becoming minister for industry, Ordzhonikidze quickly became convinced that industrial was too centralized. Instead of relying on supplies planned from above, he proposed, industrial managers should go to a wholesale market to buy intermediate goods on their own authority. To give them the right incentives, their costs would be funded by payments from satisfied buyers, not from the state budget.

These proposals resemble the unsuccessful attempt to introduce wholesale trade in industry sponsored by a later prime minister, Aleksei Kosygin, in 1965.⁴⁸ In his time Ordzhonikidze was defeated by many

⁴⁶ R. W. Davies, 'Changing economic systems: an overview', in R. W. Davies, Mark Harrison, and S. G. Wheatcroft (eds), *The Economic Transformation of the Soviet Union, 1913-1945* (Cambridge: Cambridge University Press, 1994), 18-20.

⁴⁷ R. W. Davies, *Crisis and Progress in the Soviet Economy, 1931-1933* (Basingstoke: Macmillan, 1996), pp. 11-18, 201-28, 265-70, 345-6.

⁴⁸ Vladimir Kontorovich, 'Lessons of the 1965 Soviet Economic Reform', *Soviet Studies* 40(2) (1988), 308-316.

adversaries. Below, the prospect of freedom from controls paralyzed industrial suppliers while encouraging buyers to make outrageous demands that could not be met. Above, Stalin and Molotov did not want to give up discretionary control over detailed allocation. This was decisive. In early 1933 the Politburo dismissed Ordzhonikidze's radical advisers, leaving him isolated.

This account has dwelt on times when things went badly, but there were also times when things went well. In the mid-1930s the harvest recovered and food became less scarce. Many of the great projects of the first five-year plan were completed. Production and living standards rose together. 'Life has become better, comrades,' Stalin declared in 1935, 'Life has become more joyful'.⁴⁹

The peasantry

The ability of subsistence farmers to withhold food surpluses from sale was a major obstacle to mobilization of the war economies of 1914 to 1918.⁵⁰ In the collectivization of Soviet agriculture, the Bolsheviks removed this obstacle, bringing brought 120 million subsistence farmers under the command system.

'Collectivization' comprised three distinct innovations.⁵¹ First was a return to forced procurement. This was done outside the law in the Urals and Siberia in 1928, and then legislated for the whole country in 1929. The immediate returns were considerable. In 1928, 1929, and 1930 government agents stripped the countryside of food. As food became scarce, its price rose, a warning signal from the market. The Bolsheviks interpreted rising prices as sabotage, not scarcity. They intensified the food seizures. Hungry peasants ate animal feedstuffs, and then the animals that could not be fed. The horse population collapsed, disrupting ploughing and harvesting. In 1932, poor weather triggered a famine, killing around six million. In contrast to the famine of 1921, there was little international awareness and no official acknowledgement.

Another innovation was a campaign to 'liquidate the kulaks as a class'. The kulaks (more prosperous peasants) were expropriated and excluded from rural society. Under a decree of February 1930, two million people were eventually resettled or imprisoned. The survivors suffered

⁴⁹ Stalin, *Sochineniia*, vol. 14 (Moscow: Pisatel', 1997), 84.

⁵⁰ Broadberry and Harrison, 'Economics of World War I', 18-22.

⁵¹ R. W. Davies, *The Socialist Offensive: the Collectivisation of Soviet Agriculture, 1929-1930*, and *The Soviet Collective Farm, 1929-1930* (Basingstoke: Macmillan, 1980); Davies and Wheatcroft, *Years of Hunger*.

persecution and discrimination for a generation. The signal to the people was that the traditional market route of individual self-improvement was closed forever. Only those willing to align their efforts with the command system would survive. Even this was a false promise, as the famine proved.

The third innovation was collectivization itself. The first five-year plan aimed to bring up to one in five peasant households into the collective farm sector. This target, which seemed ambitious beforehand, had two drivers. One was modernization: if the state was to invest in agriculture, it intended to retain control over the uses of new machinery. Another was control over food: the evidence suggested that larger farms based on collective cultivation would yield bigger surpluses for industrialization. As tensions rose during 1928 and 1929, the second motivation overrode the first. The five-year plan target was overtaken as Stalin signalled a more radical target, 'wholesale collectivization'. Collectivization covered half of all family farms in early 1930 (before a temporary retreat), and 90 per cent by 1936.

Collectivization greatly enhanced the state's control of grain and cattle farming and of the uses of the harvest. But it did little or nothing to cover the immediate costs of industrialization, partly because it was destructive, so that privately owned horses had to be replaced by state-funded tractors, and partly because the private food market was not completely eliminated, leaving open a channel for resources to flow back to the farming population.⁵²

Most significant for the future was reversal of the traditional ranking of claims on grain and meat. This reversal became Stalin's guarantee against the peasants' withdrawal from the market if war broke out. Before collectivization, the farmer decided what to eat and what could be sold as surplus. Under collectivization, the farm first delivered the food that the state required; then the farmers shared whatever was left.

Collectivization also involved experimentation and adjustment. Grain and cattle farming was collectivized, but from 1931 peasants were granted small allotments and the right to sell their own produce on the free market. This gave urban consumers a vital channel to unrationed supplies of eggs, fruit, and vegetables.

⁵² Michael Ellman, 'Did the agricultural surplus provide the resources for the increase in investment in the USSR during the first five year plan?' *Economic Journal* 85 (1975), 844-863.

Enemies

During this time two more elements of the command economy were set in place: the security police and forced labour. Gulag, the chief administration of labour camps, was established in 1930 to handle the hundreds of thousands of kulaks deported and imprisoned with their families. The numbers in labour camps, mainly occupied in mining and construction, rose from less than 200,000 in 1930 to 1.9 million in 1941.⁵³ The expansion was not, as some thought, led by demands for more forced labour.⁵⁴ The state did not have economic plans that could only be implemented by forced labour, and security chiefs did not lobby for more detainees. Rather, new imprisonments were dictated by waves of political mobilization, and an economic purpose was then found for the prisoners.⁵⁵

Forced industrialization and collectivization also fixed the roles of the security police in the economy. Stalin understood that many employees represented security risks, because they had been disenfranchised, expropriated, had lost family members, or had suffered themselves. The security police had to manage these risks in the workforce. Every state-owned factory and office acquired a 'first department', responsible for secrecy and security. The security police vetted personnel and looked into all cases of plan disruption or failure, including accidents and delays, for signs that enemies or disloyal elements were at work and, if so, to remove them.⁵⁶ But they did not become co-responsible for management or economic performance; this was the managers' job.

A similar mechanism for oversight was implanted in rural society. Ownership of tractors and combines that the state allocated to farming was vested in local equipment depots (MTS). The MTS supplied neighbouring farms with machinery services in return for a share of the

⁵³ V. P. Kozlov et al. (eds), *Istoriia Stalinskogo Gulaga*, vol. 4 (Moscow: Rosspen, 2004), p. 130.

⁵⁴ S. Swianiewicz, *Forced Labour and Economic Development: An Enquiry Into the Experience of Soviet Industrialization* (London: RIIA and Oxford University Press), pp. 161-2.

⁵⁵ Paul R. Gregory and Mark Harrison, 'Allocation under dictatorship: research in Stalin's archives', *Journal of Economic Literature* 43:3 (2005), 737-738.

⁵⁶ Hiroaki Kuromiya, *Stalin's Industrial Revolution: Politics and Workers, 1928-1932* (Cambridge: Cambridge University Press, 1988).

crop. Every MTS acquired a 'political department' of security officials responsible for surveillance and security in the locality.⁵⁷

Driving the Soviet command economy was always the Bolshevik conception of the foreign enemy. The ruling ideology preached that capitalism meant war. The war atmosphere was reinforced by frequent war scares. These served to confirm the existence of enemies against whom loyal subjects were expected to unite, and to expose and isolate slackers and resisters, branding them as fifth columnists.

Some enemies were real. In the 1920s there was active hostility to the Soviet Union in Russia's former western colonies from Poland to Finland. By annexing Manchuria in 1931, Japan emerged as an enemy on the eastern border. In Germany Hitler made no secret of his plan to expand eastward. With each reassessment the Red Army increased its mobilization requirements, which were then translated into ever more ambitious plans for rearmament.

These were not just war preparations. Between 1938 and 1940 the Red Army fought several actual wars. It defended the Eastern border against Japan. In the West, it seized territory from Poland, Romania, and Finland, and occupied the entire Baltic region. The annexations brought more millions of people under the command system.

In the last years before 1941 large swathes of the civilian economy were converted to war production and the assembly of thousands of airplanes, tanks, and guns, and millions of shells. What would later be called the Soviet military-industrial complex, 500 factories and institutes in 1928, grew to 1,000 facilities in 1936 and 2,000 in 1941.⁵⁸ In the late 1930s national output was stagnating (Figure 1) and the supply-side composition of the economy did not change (Figure 2) so war preparations drew resources away from both investment and consumption (Figure 3).

Conclusions

The Soviet command economy attempted to realize an idea that first arose in World War I: that the state could monopolize all of an economy's

⁵⁷ I. E. Zelenin, 'Politotdely MTS—prodolzhenie politiki 'chrezvysheishchiny' (1933-1934 gg.), *Otechestvennaia istoriia* (1992) no. 6.

⁵⁸ Keith Dexter and Ivan Rodionov, 'The factories, research and design establishments of the Soviet defence industry: a guide': Version 17 (University of Warwick, Department of Economics: 2016), available from <http://warwick.ac.uk/vpk/>. On other aspects see Mark Harrison (ed.), *Guns and Rubles: the Defense Industry in the Stalinist State* (New Haven: Yale University Press, 2008).

resources for a great public purpose. There were two main phases of institution-building, separated by a 'breathing space'. The first phase began in 1918 and lasted through 1920; the second began in 1928 and lasted through the 1930s. The second attempt was more persistent than the first, and the results were more durable, apparently because the breathing space that preceded it allowed several years of investment in new organizations and systems.

The Soviet command economy was rooted in the Bolsheviks' beliefs, examples, and experiences. Of their beliefs, most powerful was the Bolshevik conception of the enemy. A war economy was required because they expected to be permanently at war. The economy would be subject to continuous attempts at penetration and infiltration and had to be organized for defence against internal and external enemies acting together. This was a general belief, not requiring any particular evidence. It was strengthened when signals of enemy activity could be found. But it was not weakened when evidence was lacking, because lack of evidence promoted the suspicion that the enemy was at work in unseen ways.

What would a war economy mean in practice? In the Bolshevik concept of economic policy, political priorities would suppress the market equilibrium in the interests of the state. This concept had already found practical expression in the war economies that emerged across Europe in 1916 and 1917, in Russia as in Germany and elsewhere. From these examples the Bolsheviks worked out what they wanted: a war economy, more like Germany's than Russia's, but more centralized and more ruthlessly enforced than either. The result was a war economy but, unlike its antecedents, it was built on the expectation of future war rather than on war in the present. Designed to overcome Russia's weaknesses in World War I, it would prove itself in World War II.

Finally, the Bolsheviks brought their own experience from the underground, where they had learned conspiratorial decision making in secret, unaccountable cabals. Achieving power, expecting their internal and external enemies to conspire against them, they raised secretiveness and conspiracy to the level of government.

Such beliefs, examples, and experiences largely explain the permanent elements of the Soviet command economy. These included the priority of state-ownership over private property rights and of state plans over private goals; waves of political mobilization of resources into high-priority activities; centralized rationing of capital goods and intermediate supplies (including imports) based on state priorities; rewards based on the fulfilment of quotas and on political status; personnel selection based on competent loyalty; and decisions made and communicated in secret.

Not all of Stalin's innovations were permanent. Forced labour is one element that was prominent in our period but was de-emphasized later.

Likewise, food was typically rationed to urban consumers in emergencies (which, because of Stalin's other policies, were frequent), but not at other times.

The Soviet command economy shows experimentation and learning from mistakes. Lessons were learned from the failures of the Russian economy in 1914 to 1917 and of the Soviet economy in 1918 to 1920. Bribing people or killing them on the spot did not make an effective command system. A command economy needed clear, secure lines of command and control, and competent, loyal administrators to assure those lines. There followed a search for perfection, but the command economy was never perfected. The fate of the reforms that Ordzhonikidze proposed as early as 1931 illuminates the dead end into which most reformist ideas would vanish.

Why, despite its deficiencies, did Stalin want a command economy? It gave him what he wanted. Through industrialization, he acquired a powerful defence industry, a multi-million army, thousands of aircraft and tanks, and nuclear weapons. The collective farms ensured that the defence industry and the army would be fed first when the country was under attack. The economy's centralized institutions for oversight and enforcement guaranteed his authority. Here was the command economy's comparative advantage: the production of economic and military power.

Further reading

One of the most remarkable projects in the history of any country is the *History of Soviet Russia* from 1917 to 1929 in nine volumes (London: MacMillan, 1950 to 1969) begun by E. H. Carr in the 1940s and continued by R. W. Davies in his *Industrialization of Soviet Russia* from 1929 to 1936 in six volumes (Basingstoke: Macmillan, 1980 to 2014); a seventh volume up to 1940 is in preparation). Even without access to Soviet archives, Carr's work was so diligent and precise that it remains an essential work of reference. Carr took on Davies as a collaborator for the last volumes completed before his death. In his own work Davies benefited eventually from access to Soviet archives and also from collaboration with Stephen Wheatcroft and Oleg Khlevniuk.

The collapse of the Soviet state in 1991 opened up many former Soviet archives for independent historical investigation. Surveys of the resulting progress in our understanding of the Soviet economic system include Paul R. Gregory and Mark Harrison, 'Allocation under dictatorship: research in Stalin's archives', *Journal of Economic Literature* 43(3) (2005), 721-761; Michael Ellman, 'The political economy of Stalinism in the light of the archival revolution', *Journal of Institutional Economics* 4(1) (2008), 99-125; and Andrei Markevich, 'Economics and the establishment of Stalinism', *Kritika* 15(1) (2014), 125-132.

Economists have tended to describe the Soviet economy as a developmental state that provided civilian public goods and pursued civilian economic growth, although inefficiently. This tradition is exemplified by M. H. Dobb, *Soviet Economic Development since 1917* (London: Routledge and Kegan Paul, 1948), Alexander Gerschenkron, *Economic Backwardness in Historical Perspective: A Book of Essays* (Cambridge, Mass.: Belknap Press, 1962), and, more recently, Robert C. Allen, *Farm to Factory: a Reinterpretation of the Soviet Industrial Revolution* (Princeton: Princeton University Press, 2003).

In contrast to this approach, research in former Soviet archives has given greater salience to power and security as factors in Soviet economic institutions and policies. Paul R. Gregory, *The Political Economy of Stalinism: Evidence from the Soviet Secret Archives* (Cambridge: Cambridge University Press, 2004), has analysed Stalin's economic decisions in light of his quest for internal security. The needs of external security are emphasized by Lennart Samuelson, *Plans for Stalin's War Machine: Tukhachevskii and Military-Economic Planning, 1925-41* (Basingstoke: Macmillan, 2000); David R. Stone, *Hammer and Rifle: The Militarization of the Soviet Union, 1926-1933* (Lawrence: University Press of Kansas, 2000), John Barber and Mark Harrison (eds), *The Soviet Defence-Industry Complex from Stalin to Khrushchev* (Basingstoke: Macmillan 2000); and Mark Harrison (ed.), *Guns and Rubles: the Defense Industry in the Stalinist State* (New Haven: Yale University Press, 2008).

The archival revolution is still recent, but Vladimir Kontorovich and Alexander Wein, 'What did the Soviet rulers maximise?' *Europe-Asia Studies* 61(9) (2009), 1579-1601, maintain that Western economists should have reached the same conclusions long before, based on the published goals of Soviet leaders and the outcomes of their policies.

Three works commend themselves to entry-level readers. The final edition of Alec Nove's *Economic History of the USSR, 1917-1991* (Harmondsworth: Penguin, 1992) remains a vivid and compelling narrative of the Soviet economy from beginning to end. A thematic textbook on the Soviet economy up to 1945 is R. W. Davies, Mark Harrison, and S. G. Wheatcroft (eds), *The Economic Transformation of the Soviet Union, 1913-1945* (Cambridge: Cambridge University Press, 1994). Although not limited to the Soviet economy or to our period, the third edition of Michael Ellman's textbook on *Socialist Planning* (Cambridge: Cambridge University Press, 2014) is fully revised in the light of the Soviet archives and pays more attention to military affairs.

Tables

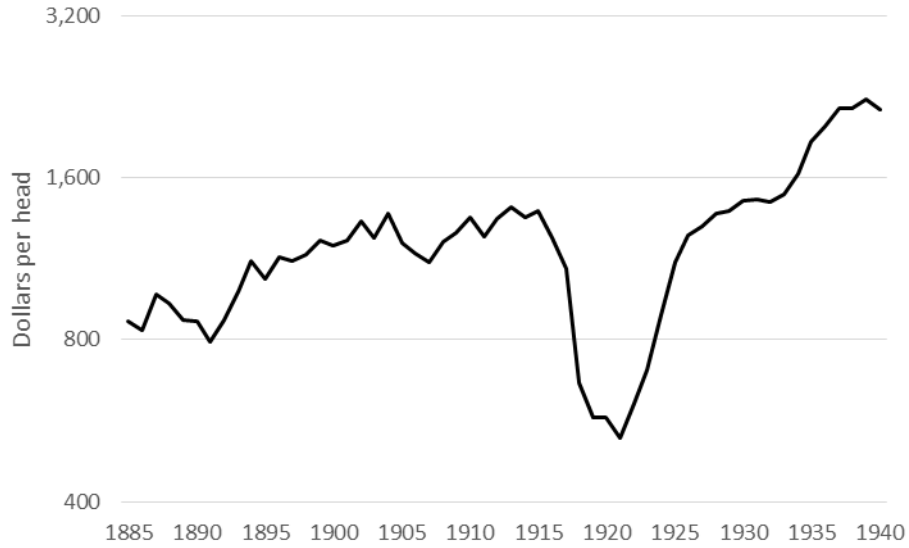
Table 1. Top ten powers in the international system, 1913 and 1940, by the compound index of national capability

	CINC in 1913	Rank	CINC in 1940	Rank	Change in CINC	Rank
USA	22.0%	1	20.2%	1	-1.8%	8
Germany	14.3%	2	17.1%	2	2.8%	1
Russia/USSR	11.6%	3	13.7%	3	2.1%	2
UK	11.3%	4	9.5%	4	-1.8%	7
China	9.6%	5	9.3%	5	-0.4%	5
France	6.8%	6	7.6%	6	0.8%	4
Austria-Hungary	4.5%	7	...	...	...	...
Japan	3.4%	8	5.1%	7	1.7%	3
Italy	3.4%	9	3.0%	8	-0.4%	6
Turkey	1.8%	10	...	...	...	...
Spain	...	...	1.2%	9	...	...
Canada	...	...	1.2%	10	...	...
Top ten, total	88.6%	...	87.9%	...	...	...

Source: The National Material Capabilities (ver. 4.0) dataset, described by J. David Singer, Stuart Bremer, and John Stuckey, 'Capability distribution, uncertainty, and major power war, 1820-1965', in Bruce Russett (ed.), *Peace, War, and Numbers* (Beverly Hills: Sage, 1972), 19-48, and available at <http://www.correlatesofwar.org/> (accessed 7 January 2016).

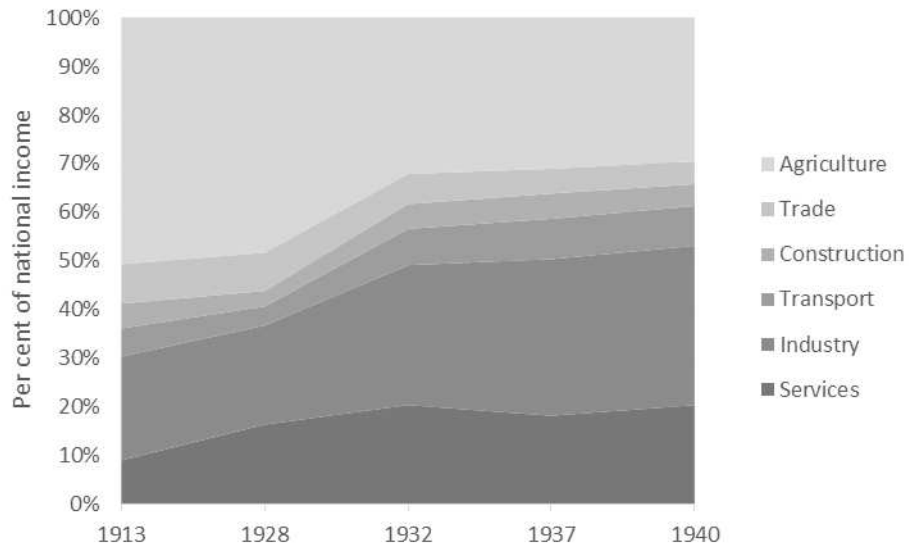
Figures

Figure 1. Russia and the Soviet Union: Real national income per head in international dollars and 1990 prices



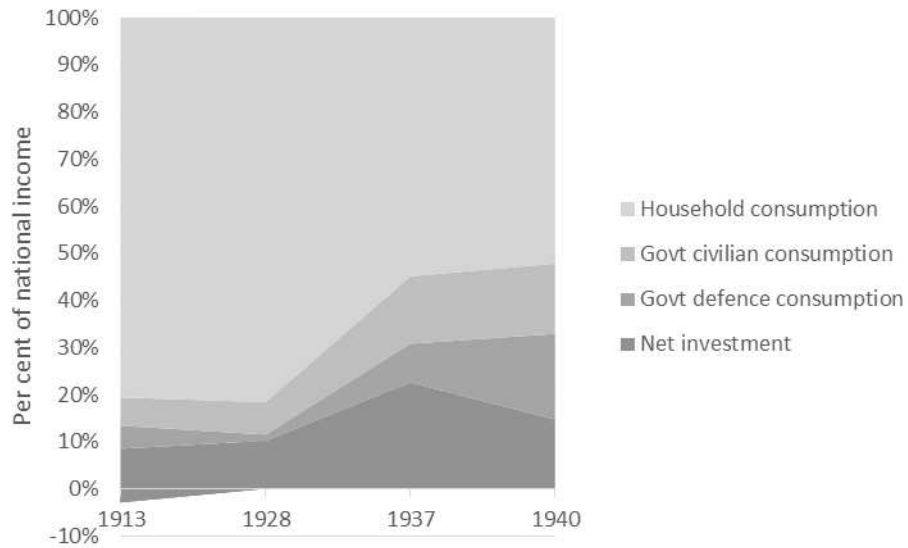
Source: Markevich and Harrison, 'Great War, Civil War', 693 and Appendix, Table A39. Figures are for Russian Empire territory (excluding Finland and Poland) to 1917, and for Soviet interwar territory otherwise.

Figure 2. Russian and Soviet national income by origin, 1913 to 1940, per cent of total



Source: Markevich and Harrison, 'Great War, Civil War', 680, and Richard Moorsteen and Raymond P. Powell. *The Soviet Capital Stock, 1928-1962* (Homewood, Ill.: Irwin, 1966), pp. 622-623). Per cent shares are calculated at 1913 prices for 1913 and 1928, and at 1937 factor costs for 1937 and 1940.

Figure 3. Russian and Soviet national income by end-use, 1913 to 1940, per cent of total



Source: Davies, Harrison, and Wheatcroft (eds), *Economic Transformation*, p. 272. Per cent shares at calculated at current prices for 1913, and at 1937 factor costs for 1928 to 1940. The shaded area that appears below the horizontal axis in 1913 represents that part of net investment financed by foreign saving, matching the deficit in the current account of the balance of payments.